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COMMAND AND STAFF COLLEGE

DOCTORAL SCHOOL

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"STRATEGIES XXI"**

**TECHNOLOGIES – MILITARY APPLICATIONS,
SIMULATION AND RESOURCES**

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NATO AIR POWER – CHALLENGES AND PERSPECTIVES.¹

ROLE AND PLACE OF THE ROMANIAN AIR FORCE

Victor STRÎMBEANU

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Abstract: *Air Power (AP) proved to be of utmost importance for the Alliance, since its very inception. A key pillar of the Alliance's Cold War deterrence capability was represented by the strength, flexibility and high-quality of its air forces, including those belonging to naval or land forces. These key AP capabilities were based on state of the art technology, superior training, interoperability, and experience, supported and amplified by a firm and efficient leadership through a solid, reliable and redundant Air Command and Control (Air C2) system. The Air Force has been permanently the first line of defence for the Alliance's air space and territory. Every now and then the Alliance turned to AP as the first choice for response to military actions. More recently, in the Balkans, Irak, Afghanistan, Libya, together now with the Space Power (SP), the AP continued to prove its unprecedented value through its implicit unmatched characteristics, like speed, perspective, precision, and ubiquity, independence of terrestrial obstacles, easy access, and economy of forces. In experts' opinion, first of all NATO has been an Air Power Alliance.*

Keywords: *air power, asymmetric conflict, air supremacy, priority shortfall areas, future security environment, confrontation paradigm, Romanian Air Force.*

CHALLENGES

First Challenge – Adaptation to the Asymmetric Conflict Environment

Contrary to its above described decisive role, after an almost seven-decade odyssey, due to continued budgetary reductions, the AP is today at risk.

The end of the Cold War and the beginning of the Cooperation Paradigm set the premises for the first major challenge to Air Power: conversion from the territorial defence to out of the traditional area peace keeping operations and, within this new context, the radical transformation in order to face the new specificities of the Asymmetric Conflict.

The asymmetrical conflict is preponderantly characterised by the confrontation with an atypical enemy, dissimulated in the local population, sometimes even assimilated by it, with combat methods and procedures unspecific to the armed forces and classic troops. Consequently, in the asymmetrical conflict, at first glance, the role of airpower is not important compared with the one in the classic armed conflict. First of all, because in an asymmetrical conflict there is no visible enemy, there is no demarcation line of own troops in relation with the enemy ones, there is no “depth of the enemy territory”, the second echelon, the reserves, the classic concentration areas, that are subject to air interdiction, for instance. Secondly, even though chronologically it is before the above-mentioned aspect, there is no enemy aviation that must be eliminated from the fight for ensuring air supremacy and freedom of movement for own troops. In its turn, air supremacy, the first condition for success in the classic, symmetrical conflict, belongs to own forces ever since the beginning of the asymmetrical conflict, but the “asymmetrical enemy” is not interested nor significantly affected by the absence of air supremacy. Because the enemy does not fight in the classic

¹ Based on Victor Strimbeanu, “NATO Air Power Paradox” and “The Air Power in an Asymmetric Conflict”, in Romanian Military Thinking, Bucharest, 2015 and 2014 respectively, and on the Conclusions of the JAPCC study, “Air Power – Future Vector”, 2014.

style. It has neither infrastructure nor visible troops, established in clearly delimited dispositions that can be attacked by the aviation that has air supremacy. The enemy is completely hidden and assimilated to the population itself, with which it is confounded, most of the time, or which protects it openly or indirectly, voluntarily or forced, for various reasons.

Under these circumstances, classic air power, at first glance, has no decisive role in determining the result of the armed conflict. More precisely, capitalising on the air power in a classic way is no longer possible but to a small extent. Therefore, airpower must adapt to the particularities of the asymmetrical warfare, partially mentioned above and which will be mentioned again depending on their importance.

The absence of a veritable air enemy makes even the term of “air supremacy” lose its significance, because “air supremacy” is an intrinsic comparison, it has a meaning only in relation with something to be compared with, more precisely with the airpower implicitly weaker or more diminished of the enemy. In the case of the asymmetrical conflict, the comparison is missing by definition or is insignificant and it can be ignored.

The absence of the control of airspace and of the forces and means that should support such a control is another essential particularity of the asymmetrical conflict. Therefore, there is no radar to take out of service, no command post, no apparent communications system.

Airfield infrastructure, ground-based air defence, concentration areas, logistics elements, ammunition depots, fuel-lubricants warehouses are just a few classic examples of absent targets of air strikes, and the list could continue. Not even traditional economic objectives, weapons factories, communications lines and nodes, urban agglomerations are no longer subject to air strikes, because they either do not exist or do not serve the strategic or political interests, such as the case of the urban centres of localities (placed at the fourth level of importance, in the Warden doctrine, for example), because the population is not hostile, at least not entirely, to the peace enforcement and peacekeeping forces. On the contrary, there is a broad political and strategic campaign of gaining public support, without which the chances of success against the enemy in the asymmetrical conflict are low up to impossible in terms of meeting the policy objectives and, ultimately, the victory. Not even this (victory) has the same meaning and content as in the traditional armed conflict. Most of the times, “victory” in an asymmetrical conflict is a political compromise that brings to power or helps to get to power democratic forces or, at least, political regimes favourable to maintaining national and regional security, cooperative and strong enough to remain in power after the withdrawal of the peace enforcement and peacekeeping forces.

However, apparently paradoxically, the absence of these classic, traditional objectives and targets does not reduce in any way the importance of airpower in the asymmetrical conflict. Quite the contrary, it establishes the premises for evolutions of real magnitude, creates significant pressure on airpower for rapid transformation and adaptation to the features of the new field of confrontation. The hidden enemy or even the one assimilated by the local population must be identified rapidly, certainly, then isolated and neutralised. This already means continuous, punctual, omnipresent air surveillance and air strikes of surgical precision. The absence of the classic contact line, doubled by the omnipresence of the enemy infiltrated in the quasi-totality of the territory, from border villages to the centre of the capital of the respective state makes the contact of land troops with the enemy possible anytime, anywhere, in the most unexpected time or place. This means, again, that air support should be delivered rapidly, accurately and efficiently, wherever needed. However, at the same time, keeping aircraft in the air, to reduce response time, remains as costly, uneconomic, inefficient and insufficient as always. This aspect has led to essential conceptual and procedural changes, such as the concept of “dynamic targeting”. Essentially, this is the ability to rapidly reschedule forces and air assets, which are already in the process of carrying out a mission, to

other targets appeared ad hoc and which exceed in importance and emergency the originally planned ones. This reduces the time of intervention dramatically, avoiding the consumption of resources in the areas of service in the air, but requires versatility, flexibility both in the means of striking, mandatory multirole, and especially at the level of command and control systems.

Due to the fact that the Asymmetrical Conflict and, by and large, the new parameters of the Cooperation Paradigm presumably began from the premises of threat reduction, the shift from the territorial defense to peace keeping operations within asymmetric environment has been done under the imperative of the “peace dividends”, more exactly it has been accompanied by massive budget reductions further reflected in re-structuring, re-organising, capabilities cuts and in the end, in a severely diminished Air Power defensive potential.

Its main capabilities, first of all the deployable ones, became almost inoperable. This situation further led to a downward trend, a real “*spiral of death*” (more abrupt for the new NATO members, including or mostly for Romania) inflicted by a diminishing readiness capacity, contracting structure, reduction of training and, implicitly, of combat potential. The resource scarcity, together with the permanent need and requests for operational forces, determined the decisional factors to concentrate these minimal resources toward maintaining the readiness level of the already operational forces, on the expense of the young trainees and on the overall force generation process.

The system response at the Alliance level

To compensate the negative impact of these phenomena, to stop the Air Power decline and to cover the capabilities gap, a series of measures have been taken by the Alliance. Firstly, a contribution of two percent (2%) from the national GDPs has been recommended for the construction of NATO common budget. Secondly, starting with 2009 (Strasbourg-Kehl Summit) and especially after 2012 (Chicago Summit) there have been implemented some projects and initiatives designed to improve the efficiency of resource spending and to stop the decline. The most significant of them are the “*NATO Defense Planning Process*” (NDPP), the “*Connected Forces Initiative*” (CFI) and the “*Smart Defense*” (SD). However, disregarding the air power’s pivotal role, contrary to the above mentioned initiatives and NATO recommendation on the minimum defense spending of 2% GDP, the nations continued to reduce air power capabilities pushing the Alliance at risk of not being able to cover its security needs and unable to fulfil its assumed level of ambition.

Sub –conclusions from the recent operations

“*Operation Allied Force*” (OAF) – FYR (Former Yugoslav Republic)

The legal OAF base was the UNSCR (United Nations Security Council Resolution) 1199; however, it only enabled air power application because the nations did not agree to send land forces.

The deployment and force build-up have been done fast, within four days after the conclusion of the Rambouillet talks on 19th of March, 1999.

The destruction of the dual-use (military-civilian) infrastructure was possible only from the air. The air strikes on the power plants and economic infrastructures led to population unrest, economy deterioration, and increased the pressure on Milosevici. The lines of communications and supply of the Serbian Army have been rapidly disrupted. In order to avoid being hit by the air strikes, the Serbian Army had to disperse in smaller units, to camouflage its manoeuvres and to limit its day-time movements. The targets have been identified by the ISR (Intelligence, Surveillance, and Reconnaissance) platforms, the global

operational picture has been constructed and disseminated using the space assets and the targets have been attacked and destroyed by PGMs with minimum collateral damage.

The political pressure, the loss of Russian support, the threat with land forces intervention, the population unrest and the air strikes, all together forced Milosevici to comply with Rambouillet Agreement.

However, without US involvement, OAF would not have been possible. AAR (“air-to-air refueling”), ISR, SEAD (Supression of Enemy Air Defence) were not available in sufficient extent and quantities on the European side of the Alliance. It means that no other future operation with air power full spectrum will be possible without the USA and, due to the fact that the US support can not be permanently and fully guaranteed, the conclusion is that the European Allies have to cover the capabilities gaps.

Although there were certain limitations (partial and non-continuous ground control, incomplete blockage of violence against population, impact of inclement weather, complex environment and insufficient ISR), one can assess that without air power, the OAF success could not be achieved or it would have had unacceptable human and material costs for the Alliance.

ISAF – Afghanistan

The legal base for air power in Afghanistan was the UNSCR 1386. The air power application in this case inflicted a series of adaptations to enable it to respond to the peculiarities of an asymmetric conflict. Amongst them, the most important are: precision, non-linear battle space, intense use of UAVs, ISR fusion, specific, complex and dynamic targetting. The air power remains the most prominent asymmetry factor of the allied operation in Afghanistan through its implicit characteristics such as speed, precision, persistence, ubiquity, flexibility, sophistication, robotization, mobility, etc. Close to 100% of the ammunitions used in operation were PGMs. All air-to-ground aircrafts have a targetting pod attached. All CAS and ISR air assets have the capacity to relay the imagery to the ground operators, in real time. The maximum response time for TIC (“Troops in Contact”) events was 15 minutes. The command and control flexibility and optimization were possible by reducing the reaction time through dynamic targetting. This was possible by two ways: firstly, by transferring the control of the air assets to the on-scene-commander; secondly, by changing the airborne assets’ missions, re-prioritising them for HVA (High Value Assets), TST (Time Sensitive Tragets) or CSAR (Combat Search and Rescue) more important than the initially allocated ones. On the other hand, the intra-theater logistics support and mobility of troops provided by helicopters and short-to-medium range airplanes, as well as the extra-theater movement by strategic aircraft, proved to be mission essential for ISAF, while operating in hostile, land-locked environment, far away from the own bases and supply sources.

However, a first conclusion is that the solution for the future is not the air power adaptation to the asymmetric conflict, but to re-build and maintain its full spectrum capabilities.

Another conclusion, at least as important as the previous one, is that ISAF revealed, again, the capabilities discrepancy between the USA and the European Allies. Europe does not have a sufficient PGMs stock, or full ISR, AAR, and strategic bombing capabilities. The necessity to cover this vital capability gap by the European Allies becomes even more important today, when witnessing the shift of USA effort from Europe to Asia.

Operation “Unified Protector” - Libya

OUP had three main pillars, as follows: an arms embargo, based on UNSCR 1970; a no-fly-zone; and protection of population against governmental forces’ attacks; (last two pillars, based on UNSCR 1973). The air power participated to all three OUP’s components.

Note: UNSCR 1973, again (see UNSCR 1199), did not authorise land forces intervention. Therefore, the three OUP pillars rested with Air and Naval Powers.

Monitoring the implementation of arms embargo was mainly a Naval Power responsibility, but the use of Air and Space ISR assets has significantly reduced the number of ships required for this operation, to a sustainable and efficient quantity. Air power contribution to this pillar was assessed as mission essential.

The blockage of Lybian air assets, through the enforcement of a no-fly-zone, was an air power mission by default and it was carried out in the same time with the protection of civilian population against governmental forces' attacks. The Lybian air defence assets were neutralized during the initial phase by the allied SEAD aircrafts, properly sustained by the ISR.

The protection of population was done almost entirely by the air power, since the UNSCR 1973 did not authorize the use of land forces. NATO Air Forces attacked the governmental forces, forced them to disperse, and blocked their combat actions and movements, thus setting the context for the opposition forces' success.

However, the absence of the boots on the ground did not make possible the complete neutralization of the terrorist groups, and could not block their withdrawal and re-grouping outside Lybian territory.

The analysis of the air power employment in OUP has demonstrated, again, its utmost role, but it also revealed some already known deficiencies such as the excessive dependency on the USA potential, the absence and/or the insufficiency of the strategic enablers (ISR, AAR, PGMs).

Overall, the OUP comparative analysis, with and without the air power employment, showed the efficiency and economicity of the consistently air power sustained operations. OUP has achieved all its objectives. The air power had the main role, or even the singular one in some cases. Last but not least, it is worth mentioning that in the OUP, no human life was lost from the Allied side.

Conclusions on Air Power's employment in recent operations

All three operations, above analysed, have had UNSCRs as legal base and have been developed as NATO operations or NATO-led operations.

For two of them ("Allied Force" - FRY and "Unified Protector" - Libya), the air power was the main or the singular employed allied capability due to the political decision as not to use the land force on those areas. The air power remains a vital instrument for the defense and protection of sovereignty and integrity of the allied territory and for enforcing the decision to attain the political, strategic and economic objectives of the Alliance.

All three operations have demonstrated the air power decisive role in achieving the operational, strategic, and in the end political, objectives. The space capability provided the communications and informations required for navigation, targeting and weather forecasts.

Limitations

In the same time, all three operations revealed a series of caveats and limitations to be approached and eliminated for the future, such as:

- Operational, geographical and capabilities limitations;
- Deficits on air assets deployment capability into the operations areas; insufficiency or absence of bases for deployment and of the logistics support and maintenance conditions on these bases;
- Intelligence deficits;
- Insufficient qualified staff for targeting, analysts, CIMIC / Influence;

- Insufficient quantities of PGMs;
- Insufficient strategic enablers (ISR, AAR, SEAD, etc.).

These limitations are the direct consequence of the lack of allied political willingness to participate to operations, and of the sub-financing the defence, leading to capabilities deficits.

Also, all three operations showed a major capability discrepancy between the USA and the European Allies. ISR, AAR, transport and combat helicopters, strategic aircraft, PGMs, EW, SEAD, are the main capabilities lacking, or insufficient, on the European side. Europe is practically dependent on the USA from this perspective, which should not be a problem as long as the USA is willing to support Europe, but the eventual shift, or re-balance, of the American effort to any other areas of interest, forces the European Allies to cover the capabilities deficits, highlighted by the analysis of the above mentioned operations.

Modern Technologies

Furthermore, all analysed operations demonstrated the advantages of the advanced technologies, with evident progress from one operation to another. If in the OAF (FRY) the sensor platforms were employed for the first time in an operation while the data processing and analysis were still done back in parental bases, in ISAF this way of operating became the norm. On the other hand, if in the OAF the PGMs employment was around 30% of total, in ISAF this mounted to almost 100%. Another major step forward, based on advanced technology, was the satellite fed ISR and GPS guided PGMs. Last but not least, the intense data flow and robotization, proved to be catalyzers, effort and effects multipliers, with still high future development potential.

The Air Transport capability enabled the decisional factors with not only the required troop's mobility but with the humanitarian intervention capability as well. As for the troops and cargo movements, in some cases in ISAF, it was directly done from the origin APOEs to the theater APODs with no intra-theater or intermediary stop-overs.

ISAF and OUP demonstrated the role and value of the helicopters in achieving the strategic objectives of the Alliance in an asymmetric conflict. Even though the helicopters are tactical air assets by design (CAS, CSAR, Special Forces insertion/extraction, troops, munitions and supplies movements), their effects are strategic by effects and importance. Therefore, NATO has to provide sufficient helicopters and properly trained crews to guarantee the future operations' success.

Risks

However, a simplist analysis of the three operations may involve the risk of an unhealthy conclusion in accordance with which, the air defence assets and GBAD are no longer necessary for attaining and maintaining the air superiority or supremacy. It must not be forgotten that all three above analysed operations, belong to the asymmetric class, with specific, limited objectives that does not require the air power full spectrum of missions, roles and objectives. The future security environment, its symptoms and evolution trends, clearly show that in the future the Alliance may face a major armed conflict, at full scale level of ambition or even above it, which might put at risk the security, sovereignty and integrity of Allied airspace and territory if there will not be taken, with no delay, measures to cover the capabilities deficits and to re-build the AP full spectrum potential.

The (reduced) participation of Allied Nations in all these three operations highlights some of the NATO specific decisional paradoxes that negatively influence the Allied capacity to decide and act. Probably the most serious of these is the "Paradox of Consensus" which is manifested by unanimous, consensual political approval by all 28 member nations, but in

practice there is a very scarce participation of those who are in the possession of the required capabilities, declared as such and offered to NATO.

The diminishing Air Power

Many NATO member states² are reducing the defence budgets at a pace that puts the Alliance capacity to cover the security needs and the assumed level of ambition at risk. This involves the risk that NATO could no longer comprehensively and efficiently use its Air and Space Power for the defence of its own populations and territories, or for the protection of its interests in operations outside its traditional geographical area of responsibility.

The continuous increase of the capabilities gap between the US and the European NATO members also shows that the Alliance is not on the right path. The most obvious example of the sub-financing's negative effect is the drastic reduction of the number of air platforms and personell. Although stopping these trends requires urgent intervention, it looks like the political decisional factors are not able, or not willing, to join efforts to stop the AP's decline and to rebuild the potential required by the security needs and the level of ambition. In the end, this attitude will further accelerate NATO's vulnerability.

Priority Shortfall Areas (PSA) identified by NDPP

Note: the PSA concept must be understood as a capability deficiency that has to be given priority. Following an Allied Command Transformation's complex study done in 2008, there have been identified, on mathematical bases, 50 PSAs requiring financing priority for urgent remedial. The study conclusions and recommendations have been sent to the nations for action, but the project, as many other similar initiatives, remained with no significant effect if any at all.

The NDPP analysis revealed the following PSAs requiring urgent attention and financing:

- Theatre and Ballistic Missile Defence (TBMD);
- Counter-Improvised Explosive Device Technologies (C-IED-T);
- Joint Intelligence, Surveillance and Reconnaissance (J-ISR);
- Cyber Defence (CD);
- Deployable Medical Support;
- Reduced operational cycles for weapons and technical systems;
- The level of flight hours/pilot/year, much below NATO standard (*Allied Force Standards Volume III – Prescribed hours standards*);
- Incomplete and insufficient ammunition stocks, especially PGMs;
- Under-manning;
- Non-compliance with assumed obligations to participate within NATO Command Structures (NCS) or NATO Forces Structures (NFS), for example in NATO Response Force (NRF).

Under the continuous budgetary cuts, the nations have adopted implicit measures, focusing the remaining (scarce) resources on the operational commitments that further led to sacrificing the force generation, the modernization and transformation. Some nations have moved the deadlines for some of their essential capabilities till 2018 or beyond; they have delayed the procurement programmes behind the normal planning and operational cycles; or have completely deleted certain projects, without consultation and coordination at the Alliance level for eventual compensation by the other nations in order to avoid the risks to security needs and level of ambition over-all.

² 17 states have reduced the defence budgets in 2010 and 14 of them continued reductions in the following years.

The “Spiral of Death”

On short term, these budget reductions may have some positive effects on economy, by and large, but on medium and long terms, they lead to complete loss of essential air power capabilities and of the over-all combat potential. This way, it has already inflicted an excessive use of air assets and implicitly to anticipated repairs and modernizations; the de-commissioning plans have been extended, thus consuming additional resources out of those initially planned for upgrades; the training has been reduced and oriented towards low-intensity operations which in turn further affected the readiness status and the range of missions; the successive reductions of the staff expenses, have led to manning deficits, diminishing or even suspending the recruitment and force generation process, as well as to salary and dividends reductions.

For some arguable short term benefits, it is being propagated and amplified on long term, expenses and costs much bigger than those normally required by the budgetary planning cycle; or, if covering the capability gap is abandoned, then the security needs and the level of ambition are at risk.

The so-called “vertical cuts” (complete deletion) of some planned projects and capabilities, will lead to limited range of air power roles and missions and to increased European dependency on USA, exactly when the latter announces the intention to shift its effort from Europe to Asia.

The “horizontal cuts” (quantitative and qualitative limitations), or the “capabilities slicing”, led to severe deficits and increased the interdependency of the Allies, with no symptom from the political side to improve the nations’ answers to the Alliance requests for resources and force commitments.

The instruments designed to compensate these negative trends (NDPP, SD, CFI, etc), did not produce the expected effects due to lack of political will in complying with Alliance recommendations and requests to participate to operations, and NATO does not possess a mechanism to guarantee that nations will commit and fulfill the assumed obligations. The explanations reside, again, with the lack of political will, and with the over-all prevalence of national interests on the expense of the Alliance ones. Under these circumstances, the instruments designed to compensate the capabilities deficits, cannot solve the problem; the trans-atlantic capability gap is not sustainable on long-term; the discrepancy between the security needs and level of ambition, on one side, and the capability level on the other side, will increase; and lastly, if this trend continues, the Alliance will no longer be able to cover the security needs and its level of ambition.

It is true that a critical capability level has not been defined. This is dynamic by definition and only a full scale conflict could reveal whether this threshold has been touched. Can NATO afford such a risk?

The air power “full spectrum” and the “assured availability” have to become realities. The solution is there and it is political in nature: a mechanism to guarantee that nations will fulfill the assumed obligations.

The Second Challenge – The Future Security Environment and the Confrontation Paradigm

As the First Challenge and its consequences would not be enough, since three years ago the Alliance faces a new challenge even more complex than the first: the shift from the Paradigm of Cooperation to the Paradigm of Confrontation. The new transformational stage involves firstly and more likely the most important, rebuilding full spectrum capabilities. At Wales Summit, 2015, the Allies already decided to raise the defence budgets to a minimum of 2% of the GDP. But, at this level the evolution is influenced by inertia. If the money will be

immediately allocated, the rebuilding process, under free market economy mechanisms, takes between five and seven years from the moment it starts. Until then, the threat must be diminished by deterrence, through economic measures, through firm declarations of unity, cohesion and decisive action with full mobilization of forces and resources in case of aggression.

The security environment, by large, and the battlefield in particular, are rapidly changing and it has radically changed in March 2014 by seeing Russia moving openly from a Partnerial posture to an Adversarial one, although such symptoms, more or less visible but certainly not understood by the Alliance, have been manifested almost immediately after the coagulation of the Soviet Union remnants into the newly framed Russian Federation. Moving back to the Future Security Environment, by large, strategical advances, the non-statal actors, the proliferation of weapons of mass destruction, the demographic balance disruptions and the climate changes, all together contribute to the construct of a new, complex, multi-dimensional, non-linear, unstable, uncertain, contested, congested and letal confrontational environment. The future armed conflicts will be based on a multitude of reasons and will evolve simultaneously on multiple areals (political, military, economical, social, religious, informational), on own territories or wherever in the world. In some, certain, contexts, it will no longer be possible a clear delimitation between conflicting parties and the need to delineate the combatant from the non-combatant will be more pressing, leading to request for more information, faster data processing, clearer and safer targeting and, not least, smarter weapons.

We are witnessing, as well, a transfer within the global balance of power, due to the fast economic evolution of some of the developing countries, while the Western economies are still recessing. In the same time, the technology is fastly evolving. One could already estimate today, that air and space power will have to face a completely new model of armed conflict.

The economic development of the Asian countries leads to a rapid shift of global power towards the Eastern hemisphere. This economic shift will be followed by the adjustments of military balance, especially of air and space. The engine of these anticipated changes resides in the major Air and Space Power investments made by China, Russia and India, while the Westerners dramatically reduce their defence spending.

The physical and digital space will likely be very much contested in the future. The future military operations will be extremely difficult or even impossible if NATO will fail to maintain the current capabilities advance and if it will not develop them in the same rhythm with its potential competitors. The competition for continuous access and informational superiority is sharpening, the possibilities for connectivity, as well as for blocking the access, are increasing, with a major impact on the future security environment. The initial advantage of NATO states in this regard, is rapidly diminishing. China already won this competition when it created a cyber attack capability, able to hinder the Allies' freedom of movement in this environment. The most affected capabilities will be the hi-tech ones, such as the Air Force.

For the time being, NATO still has an advantage in the air space command and control, compared to its potential adversaries. But, due to the cronic defence sub-financing, this advantage is rapidly eroding. In the same time, the air defence systems proliferate and become available to potential adversarial states or even to non-state actors.

The shift from the Cooperation to the Confrontation Paradigms obliges to urgent measures to stop the decline, immediate investments in defence, rebuilding Air Power full-spectrum capabilities.

The Third Challenge – reducing the dependency on the United States of America

Even before the election of Donald Trump as the President of the USA, there were symptoms of re-directioning in the American geo-political interest towards other world areas and even direct and explicit requests, fully justified³ otherwise, from this strategic Ally to its European Partners to increase their contribution to the overall NATO effort. The new presidential administration, although they did not withdraw the American support, they reiterated in more categorical terms the need for the European Allies to significantly increase their contribution to the overall NATO effort. From European side of the Alliance (NATO E), practically no Ally, maybe excepting France, has a full spectrum capable Air Power. All European Allies, not only “The Big Seven” (France, England, Germany, Italy, Spain, Netherlands and Poland)⁴ have to revise their defense policy and its finance support especially because under the new security circumstances the defense of the own territory comes again as first priority while the crisis management elsewhere outside Allied territory will be secondary responsibility.

The Role and Place of the Romanian Air Force

Within the Allied context scenario, Romania has the responsibility of a minimum defense effort able to resist an aggression until the Allied force package is deployed, to provide the required logistics support for these forces and, later on, to continue alongside them to its own defense. Under these circumstances, the Romanian Air Force will employ all air assets and manpower in accordance with the Integrated Air Defense Plan (which brings together all air defense capabilities, to include the Land Force and Navy ones). In case of an aggression against another Ally or Allies, Romania has to bring its own contribution to the collective defense of those Allies consisting of those forces that are declared to NATO and offered as such. Obviously, the declared forces have to be fully operational and ready to move from the pre-crisis stage. In the absence of a direct aggression on the Alliance, Romania still has to bring its own proportional contribution to the stabilization and peace keeping operations decided by the Alliance political leadership in accordance with the assumed level of ambition. In the latter case, the Romanian Air Force could cover some “niche” missions such as short and medium-range, intra and extra theater of operation, airlift, air policing with its MiG 21 LanceR and more recent with F-16, Close Air Support (CAS) and Combat Search and Rescue (CSAR) with its IAR-330 SOCAT, MEDEVAC / CASEVAC with C-27 Spartan or IAR-330 M/L, etc.

In an “on its own scenario”, Romania may manage a security situation generated by aggressors from close vicinity with comparable defense potentials. Faced with an aggression perpetrated by a much more powerful state compared to the Romanian one, there is no other solution than Armed Resistance at National Level (ARNL)⁵ that supposes reactivation of mandatory military service (for a reduced term, 6-8 weeks, but intensive military education and training), preparation of the whole national territory for defence, re-construction of national defence industry, transition of national economy to the war status, the creation of the implicit logistics stocks. However, even under these circumstances, in order to face an

³ See the NATO NA (NATO North America) and its European Allies defence investments nomogram (attached). Before the end of the Cold War, NATO E was providing around 34% from NATO overall defensive effort, while the North America covered the remaining 66%; today, this gap grew to 24% NATO E versus 76 NATO NA.

⁴ The Big Seven NATO E provide around 80% out of the remaining 20% for the Europeans from the overall NATO defensive potential, while the remaining 20 Allies barely covers 20% altogether.

⁵ The concept was developed by the author the book “Strategy for the Future of Romania”, Editor “Editura Militară”, Bucharest, 2015.

aggression from a much more powerful state, “stand-by” defence agreements with external Partners are to be preventively in place.

The future Romanian Air Force development directions have to re-include the major programs that have been horizontally or vertically cut, as well as new acquisitions program to fill and sustain the defensive potential required by the assumed level of ambition both in Allied or national context.

CONCLUSION

At NATO level we see today a “true paradox”⁶ of Air Power. On one hand, the air power has represented and continues to represent a key pillar of the the Alliance defence capacity in such an extent that specialists consider NATO an “Air Power Alliance”. On the other hand, the air power is diminishing; the capability gaps, the allied interdependency and the dependency on the USA are increasing, making the Alliance more vulnerable and risking its security needs and the assumed level of ambition.

Additionally, the analysis and the prognosis on the future security environment, show that the Alliance will have to operate in a completely new, complex, multi-dimensional environment, requiring full spectrum capability, determined by the shift into the Confrontation Paradigm and by an eventual new global power distribution.

After the First Challenge (Adaptation to the Asymmetrical Conflict) that maybe be considered almost done, the Allied Air Power is facing today at least two new, complex challenges, each one with multiple sub-components and consequences. One is the (continuous) adaptation to the new security environment in the same time with the management of the Confrontation Paradigm’s consequences. The other one is valid for NATO E only and aims to reduce (desirably as low as possible) the dependency on the United States of America. It is difficult to evaluate which one of these challenges and their implicit perspectives are more costly and more difficult to achieve. On short term, it is probably the raising of the Air Power potential back to the Confrontation Paradigm.

The Alliance has to adapt or it will lose its relevance. The solutions are possible and they rest with the political factor. Amongst them, the most relevant are the following:

- A national defence budget contribution up to 2% of GDP, accepted by all nations;
- Fulfillment of assumed capabilities obligations by each nation and offering them for allied operations;
- Common agreement to provide capabilities and resources not only for collective defence, but for crisis management and cooperative security as well;
- Planning, designing and resourcing the development, the transformation and modernization requirements, based on a correct evaluation of the future security environment;
- Re-building the *full spectrum* AP (missions and roles) potential;
- Maintaining the freedom of movement in the air, space, and digital environments; assured access for own forces and denying it to the adversaries;
- Cooperation with Partners in building the capabilities, assuring the access and the host nation support.

All these above mentioned measures, stemming from objective analysis, are viable, realistic and possible. They only have to be promoted and resourced.

⁶ A “true paradox” may seem a contradiction in terms; it has to be taken as a metaphor intended to highlight the dramatic situation of Air Power today.

CENTER OF GRAVITY – ESSENTIAL ELEMENT OF OPERATIONAL DESIGN

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Abstract: *In recent years, in the literature, were spun off a series of theoretical aspects related to the identification, determination and exploitation of centre of gravity which, clearly, is considered to be an essential part of designing an operation, the existence or lack thereof which may or may not fit the operation in time and space.*

Thus, in our approach, we try to bring into focus certain theoretical considerations of the center of gravity whereas, in our opinion, the proper determination of it represents a not-so-easy process roadmap and which constitute an essential part of the design, and that, as a process still abound of the ambiguities, artificial limitations and contradictions.

Keywords: *centre of gravity, operational design, critical capabilities, critical vulnerabilities, strengths, weaknesses.*

„The passions which agitate the masses that are brought into collision, the warlike qualities of these masses, the energy and talent of their commanders, the spirit, more or less martial, of nations and epochs, in a word, every thing that can be called the poetry and metaphysics of war, will have a permanent influence on its results.”

Antoine-Henri JOMINI, „Traité de grande tactique”

Introduction

The center of gravity is a concept difficult to handle and is a permanent topic discussed in the literature. Developing the operational design should begin once the CoG's determination. Applied correctly and consistently used, this concept helps formulate a rational decision regarding the use of instruments of power. At the same time, it helps to focus efforts on achieving a campaign or operation, by viewing permanent logical link between strategic, operational and tactical objectives..

Also, the theory of the essential factors of the center of gravity is very important as the relationship between these elements and center of gravity are marked by interconnection and interdependence either they are used to determine the center of gravity – the theory expressed by Milan Vego and Dale C. Eikmeier, or they are used for the indirect approach of the center of gravity once it has been determined - the theory formulated by Joseph Strange and Richard Iron.

Critical factors of the center of gravity –JOSEPH STRANGE and RICHARD IRON`S theory

In 1996 Joe Strange and Richard Iron defines critical factors as those factors essential for indirect approach of the center of gravity after it has been determined. So, after the center of gravity has been determined, next is used the proposed construction by Strange to determine weaknesses that, in its view, rank critical vulnerabilities which must be exploited in order to neutralize the center of gravity – the essence of indirect approach. The following critical factors are defined such:

1. Critical Capabilities – „*every center of gravity has some primary ability (or abilities) that makes it a center of gravity in the context of a given scenario, situation or mission – including phases within campaigns or operations*”¹. These critical capabilities are essential elements expressed by a verb, directly connected with the center of gravity and describe what it can do to achieve an objective set. This definition is taken, in a more explicit manner and with the same effect, by JP 5-0 Joint Operation Planning, edition 2011 as: „*those that are considered crucial enablers for a COG to function as such, and are essential to the accomplishment of the adversary’s assumed objective(s)*”², which is in contradiction with the definition also expressed in JP 5-0 on page GL-8 where critical capability is defined as „*a means that is considered a crucial enabler for a center of gravity to function as such and is essential to the accomplishment of the specified or assumed objective(s)*”³. Therefore, it appears that in the last definition, critical capability is expressed by a noun, not a verb, as shown from the first definition. This ambiguity is debated by Col. Dale C. Eikmeier in article titled „*Modernizing the Center of Gravity Concept - So It Works*” that, in accordance with the definition given by it to the center of gravity, he proposed a definition for critical capability as „*primary abilities essential to the accomplishment of the objective which merits a center of gravity to be identified as such*”⁴ strengthening the principle whereby the critical capability is, in fact, a critical ability (so, expressed by a verb) of a CoG (center of gravity) to achieve the objective, objective for which it was determined that the center of gravity.

In conclusion, from the analysis of the definitions of critical capability, in order to eliminate the confusion and ambiguity, it can be said that the critical capability is equal with the critical ability also equal with the CoG`s characteristics which make it to do something set in accordance with the objective to be achieved in accordance with it was determined that center of gravity.

2. Critical Requirements are defined by Joseph Strange and Richard Iron as „*conditions, resources and means that are essential for a center of gravity to achieve its critical capability*”⁵, and according to JP 5-0 they are „*conditions, resources, and means that enable a critical capability to become fully operational*”⁶. It is observed that the two definitions have in common those elements expressed as nouns (resources and means) and elements that cannot be expressed by noun (conditions). On the other hand, the difference consist of the direct link with the center of gravity which has the critical capability, expressed by a verb, to achieve the objective established – in the case of the first definition, and, in the case of the second definition, the direct link is between critical requirement and critical capability. It can be observed, thus, in case of definition expressed in JP 5-0, the rift between

¹Dr. Joe Strange/Colonel Richard Iron, *Understanding centers of gravity and critical vulnerabilities – part 2*, Joint Force Quartely, National Defense University, Washington, p. 7.

²*** JP 5-0, *Joint Operation Planning*, 11 August 2011, p. III-24.

³*** JP 5-0, *op. cit.*, p. GL-8.

⁴Colonel Dale C. Eikmeier, *Modernizing the Center of Gravity Concept – So It Works*, US Army Command & General Staff College, 2014, p. 18.

⁵Dr. Joe Strange/Colonel Richard Iron, *op. cit.*, p. 7.

⁶*** JP 5-0, *op. cit.*, p. III-24.

the critical requirement – the center of gravity – the objective. As a conclusion of analysis of the two definitions it follows that the definition from JP 5-0 is not providing the direct link between critical requirements – center of gravity – critical capabilities as described by the definition given by Joe Strange and Richard Iron.

3. Critical Vulnerabilities are defined by Strange/Iron as „*those critical requirements, or components thereof, that are deficient, or vulnerable to neutralization or defeat in a way that will contribute to a center of gravity failing to achieve its critical capability*”⁷. In JP 5-0 these are expressed as „*those aspects or components of critical requirements that are deficient or vulnerable to direct or indirect attack in a manner achieving decisive or significant results*”⁸ Strange and Iron identifies two distinct situations in which operate the critical vulnerabilities: *the silver bullet*⁹ type is the most favourable situation in which if a single critical vulnerability is neutralized enemy’s CoG is unable to achieve the objective established, and *the lead-bullet*¹⁰ type is the situation whereby the cumulation of all critical vulnerabilities are being exploited which leads, automatically, to neutralize the CoG.

Once again the definition from JP 5-0 is ambiguous and there is no correlation of the first definition regarding the direct link between critical vulnerabilities – center of gravity – critical capabilities.

Critical factors of the center of gravity –MILAN VEGO’S theory

Another theory regarding the essential factors of the center of gravity is that proposed by Milan Vego in his work entitled „*Joint operational warfare: theory and practice*”. Unlike Joseph Strange and Richard Iron theory, Milan Vego defines critical factors as essential factors used in the determination of the center of gravity. Thus, the following critical factors are defined by Vego so:

1. Critical Strengths – those essential elements, expressed by a noun, representing „*primary sources of physical or moral potential/power or elements that integrate, protect, and sustain specific sources of combat potential/ power*”¹¹. Thus, the method of determining such critical strengths is, in fact, an abstract process based on military experience and an adequate judgment of the situation which it represents in fact instruments of operational art. It should be noted that there may be a number of strengths, but not all, are critical; from all list of strengths, only a fraction become critical only if, by using them, the achievement of the objectives may be influenced in one way or another. So, it is expressed the direct relationship between critical strengths and objectives.

2. Critical Weaknesses – those elements expressed also by a noun and representing „*sources of power, essential for accomplishing the objective, that are grossly inadequate to accomplish the mission*”¹². So, just as in the case of critical strengths, weaknesses become critical only where their use may influence the way of achieving the objectives.

3. Critical Vulnerabilities – „*those critical weaknesses (and sometimes critical strengths) open to the enemy’s attack or exploitation*”¹³ and become critical only if there is an own capability to perform this task. In other words, critical vulnerabilities, typically derived

⁷Dr. Joe Strange/Colonel Richard Iron, *op. cit.*, p. 8.

⁸*** JP 5-0, *op. cit.*, p. III-24.

⁹Dr. Joe Strange/Colonel Richard Iron, *op. cit.*, p. 8.

¹⁰*Ibidem.*

¹¹James P. Butler, *Godzilla Methodology Means for Determining Center of Gravity*, articol accesat pe <http://ndupress.ndu.edu/Media/News/NewsArticleView/tabid/7849/Article/577478/jfq-72-godzilla-methodology-means-for-determining-center-of-gravity.aspx> la data de 15.02.2017.

¹²*Ibidem.*

¹³Major Jonas Andersson, *Center of Gravity Analysis – an Actual or Perceived Problem ? – Thesis*, Swedish National Defence College, 2009, p. 23.

from a list of critical weaknesses (sometimes critical strengths), for example, an infantry battalion can be considered as a vulnerability because it does not possess the ability of air defence and moreover becomes a critical vulnerability only if there is a own force that would exploit this vulnerability. We noted that vulnerabilities usually derive from critical weaknesses but we don't exclude that they may derive from the list of critical strengths; for example, if a naval group consist of aircraft carrier, destroyers, frigates and submarines, was determined as being a critical strength, vulnerability which may derive from it can be represented by logistic ship or support ship and this vulnerability becomes critical only if we have the capabilities that may target on this ship.

Relationship between essential factors can be expressed in the following graphic¹⁴ displayed in Figure no. 1.

To determine these critical factors, Vego is highlighting the knowledge of the military situation, the objectives whose achievement will lead to the achievement of the desired End State, these representing the main ingredients in determining critical factors. When we look at these „ingredients” we must identify what is essential for achieving the objectives. The tangible or intangible factors identified following this analytical process are becoming critical factors.

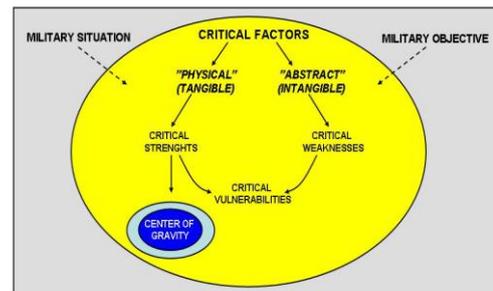


Figure 1

Methods for determining center of gravity

The following are worth mentioning a few methods for determining CoG, as exhibited in various specialized sources, such:

1. The Method¹⁵ developed by Lieutenant Colonel Tim Keppler (1994) and promoted further by Kevin Giles and Tom Galvin (1996). They identify, on the basis of an analysis of the economic, military, diplomatic, cultural, psychosocial, historians, etc., factors, those elements that ensure the enemy's source of power, and thus, those elements could be considered as possible center of gravity. Next, it was made one test-question whose answer is linked to only one CoG from previously proposed CoG's list.

When in a conflict take part state actors, such a test-question, to determine enemy's strategic CoG is: *"whether imposing our will on it will create the deteriorating effect that prevents our foe from achieving his aims and allows the achievement of our own in a sufficiently decisive way?"*¹⁶ and for determining enemy's operational CoG, test-question is: *"whether imposing our will on it will lead to accomplishment of our military aims and denial of the enemy's military aims?"*¹⁷.

When in a conflict is involved, at least on one side, a non-state actor (e.g. Al-Qaida, ISIS), enemy's strategic CoG can be identified (not determined) into the source of the problem/situation that requires military intervention. Instead, the determination of own's strategic CoG can be done by testing all possible CoG applying test-question: *"what national or international source of strength must we have, protect, and sustain at all costs in order to continue on and achieve our strategic aims ?"*¹⁸. For own's operational CoG test-question is: *"what aspect of our forces must we have at all costs in order to continue on/achieve our military objectives enroute (or in parallel to) imposing our will on the strategic CoG ?"*¹⁹.

¹⁴Figure taken and adapted from Major Jonas Andersson, *op. cit.*, p. 22.

¹⁵Lieutenant Colonel Tim Keppler, *Center of Gravity Determination and Implications for The War Against Radical Islamic Terrorism*, U.S. Army War College, Mar 2005, pp. 6-9.

¹⁶Lieutenant Colonel Tim Keppler, *op. cit.*, pp. 6-9.

¹⁷*Ibidem.*

¹⁸*Ibidem.*

¹⁹*Ibidem.*

2. STRATEGIC HELIX²⁰ Method (1999) proposed by Col. Phillip Meilinger which assume that the center of gravity could not be determined, probably in a state of equilibrium, only in the planning stage of the operation; as a result, it will take target on every possible CoG from the list of CoG candidates observing the effects on the enemy to make as the „real” center of gravity to emerge to the „surface”.

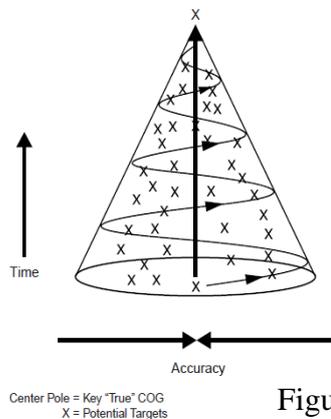


Figure 2

As it is shown in the next figure²¹, these targeting is translated into decisive action as observing the effects achieved, in order to identify opportunities whose exploiting will lead to pre-empting the enemy in decision making so that he will have a low-tempo just at the reaction. This method is specific to the air force and it applies starting from the planning process (by identifying CoG candidates) and continuing during operation (attacking these CoG candidates such as the real one to be neutralized). We can say that this method is applied nowadays in Syria against ISIS.

3. ONION²² Method (1999) proposed by Colin Agee from the School of Advanced Military Studies who assume that the enemy`s center of gravity represents foundation (basis) of a system(s), the system that enable the enemy to act.

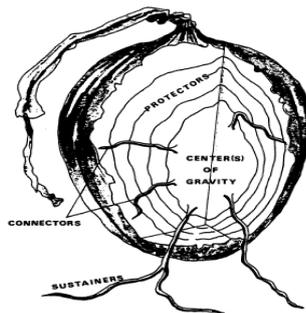


Figure 3

At the same time, this method, as shown in the next figure²³, represents the enemy`s center of gravity as being in the center of three concentric systems called protectors system, then the connectors system and the last being the sustainers system.

4. The method proposed by Colonel John A. Warden III, also known as John Warden`s Five Ring Model²⁴, it is very often used by the air force and assumes, according next figure²⁵, the existence of five concentric rings with the leadership on the inside, the next being the

²⁰Major Seow Hiang Lee, *Center Of Gravity or Center of Confusion: Understanding The Mystique*, Maxwell Air Force Base, Alabama, April 1999, pp. 27-28.

²¹Figure taken and adapted from Major Seow Hiang Lee, *op. cit.*, p. 28.

²²Major Collin A. Agee, *Peeling the Onion: The Iraqi Center of Gravity in Desert Storm – A Monography by Major Collin A Agee Military Intelligence*, School of Advanced Military Studies United States Army Command and General Staff College, Fort Leavenworth, Kansas, 1992, p. 35.

²³Figure taken and adapted from Major Collin A. Agee, *op. cit.*, p. 46.

²⁴Major Gary M. Jackson, *Warden's Five-Ring System Theory: Legitimate wartime military targeting or an increased potential to violate the law and norms of expected behavior?*, Maxwell Air Force Base, Alabama, 2000, p. 9.

²⁵Figure taken and adapted from Clayton K. S. Chun, *Chapter 19: John Warden's Five Ring Model and the Indirect Approach to War*, p. 5

essential organic elements, then it has the infrastructure followed by population and the latest on the outside, being military capabilities.

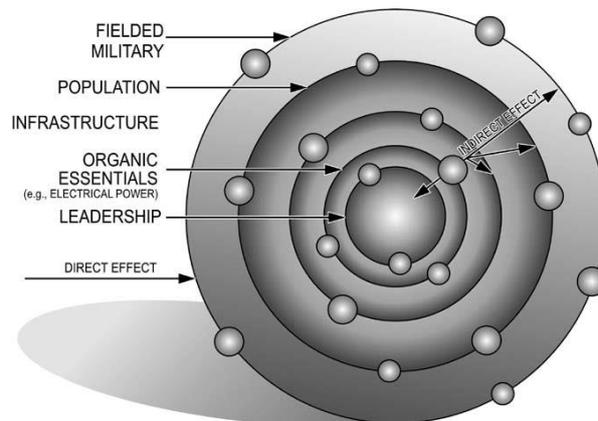


Figure 4

Warden understands a function of state as a biological organism having the brain (comparable to leadership) that controls other systems and that if it is destroyed it make paralysis which is translates, in military terms, in „strategic paralysis”²⁶. Therefore, leadership is the most important system because it can decide the enemy`s course of action and the other circles arranged outward represent less importance, the military capabilities have lowest importance but which are designed to protect other inner circles. In order to obtain the nation's collapse, Warden argued that it should be acted on, if possible, directly on the leadership, and if this is not possible then we will have an indirect approach through direct targeting on the other outward circles which protects the inner one. In this regard, planners will identify which targets are the primary targets – strategic CoGs (equated with critical vulnerabilities) – whose neutralization lead to influencing leadership. Further, it will identify at operational level those CoGs by analyzing each circle (system) in part by applying the same method – Five Ring Model but this time these rings are properly identified at operational level. Next, Warden recommends air attack simultaneously on these targets – strategic CoGs in order to obtain strategic paralysis.

5. THREE STEPS²⁷ Method proposed by Antulio Echevarria (2002) which determine what focal points sustain the entire system of combatants and which lead to the clear definition of the operation`s purpose and also define the direction to be followed in order to achieve the objectives set out. He proposes to have an approach regarding the concept of CoG not in terms of capabilities (physical approach) but, rather, an approach from the point of view of the effects followed. Although the two approaches are interlinked, the effects based approach is optimal to identify the effect (from the point of view of the stages of defeating: defeat, destruction, neutralization, or any other possible effects, which are not covered by the stages of defeating) and the actions based approach to be undertaken to the detriment of capabilities based approach which aimed at identifying the strengths or capabilities of the enemy which impede the attainment of our objectives. As a result, this type of approach – based on effects – is much more effective, for example in print obsolete conflicts such as the anti-terrorism (ISIS in Syria), so CoG is a focal point and not strength or source of power. To be more explicit, he uses the following example regarding how to destroy a table: „by

²⁶Major Jacob Barfoed, *The COG strikes back: Why a 200 Year Old Analogy Still Has a Central Place in the Theory and Practice of Strategy*, Baltic Security and Defence Review, Volume 17, Issue 2, Baltic Defence College, Estonia, 2014, p. 10.

²⁷Antulio J. Echevarria, *Clausewitz`s Center of Gravity: Changing our Warfighting Doctrine-Again!*, Strategic Studies Institute, U.S. Army War College, 2002, p. 16.

*dissolving the glue that holds a table together, rather than striking at its individual legs*²⁸. However, when talking about classic conflicts (when states are involved with a clear identity), Echevarria not renounced the idea of approaching CoG in terms of capabilities, making that determination of the CoGs at all levels of war is not required to be submitted but only translating the strategic objectives to the operational objectives and, so on, to the tactical objectives; for example, in the First Gulf War (1990-1991), instead of translating the strategic objectives – to expel Iraqi forces from Kuwait, and to reduce Iraq's offensive capabilities – to the operational and tactical objectives, thus giving the coalition forces the directions for carrying out tasks, and automatically, identification of the enemy's critical capabilities that had to be neutralized in order to attain the objectives, CENTCOM has lost a lot of time trying to identify iraqi's CoG at the expense of planning how to neutralize it.

This method of determining the CoG presumes the following steps:

Step 1: *„Determine whether identifying and attacking a CoG is appropriate for the type of war we are going to wage*”. For example, the campaign against Al Qaeda, as part of the global war against terrorism led by the United States, won't end if terrorist groups will not be neutralized or destroyed (effects – the stages of defeating); so, the determination and the neutralization of the enemy's CoG will result in the achievement of a well defined end state.

Step 2: *„Determine whether the adversary's whole structure or system is sufficiently connected to be treated as a single body*”. For example, Al Qaeda terrorist cells operate almost independently of the physical links having very little used (specifically, communication: cellular, internet links) in order to achieve their objectives that have been established in advance to be met without giving an express order to conduct; instead, between these cells there are clear-cut links represented by ideology that govern their actions. As a result, it may be worthwhile determining an ideological CoG (intangible) whereas the physical CoG (tangible) does not lend itself to such anti-terrorism cell system.

Step 3: *„Determine what element has the necessary centripetal force to hold the system together*”. Once it has been established that there is an ideological CoG (intangible) of Al Qaeda network, still it is necessary to determine what element of ideology appears to be the centripetal force that support the system. A relevant answer is that *„hatred of apostasy*”²⁹ (embracing the Christian faith is a form of heresy which is punished with death) manifested by extremists Muslims – it would outline in an ideological CoG. Instead, removal of Bin Laden – a CoG leadership type – as was long believed, would not lead to the collapse of the system whereas the other Al Qaeda leaders would take place resulting in the perpetuation of terrorist actions. This type of leadership represents a critical capability but whose defeat will not lead to the ending of anti-terrorism campaign. So hatred of apostasy – enemy's CoG which has, as critical requirements, continues recruitment, financing and moral support of other Muslim States, and the critical vulnerabilities are represented by poverty, corruption, the spread of Western influences and social and political violence prevalent in Muslim society. These critical vulnerabilities could be eliminated by employing diplomatic and informational instruments in a campaign to discredit the notion of *„apostasy*” wrongly understood among Muslims, and military capabilities would be engage only to eliminate those extremist cells.

In conclusion, if it is correctly answer to these questions, it would highlight what sustains the enemy system and what makes it operable outlining, thus, the enemy's center of gravity valid for any type of conflict.

6. EIGHT STEPS Method³⁰ (2009) proposed by Milan Vego for determining both own's and enemy's CoG as it is shown in figure³¹ no. 5.

²⁸Antulio J. Echevarria, *op. cit.*, p. 13.

²⁹Antulio J. Echevarria, *op. cit.*, p. 27.

³⁰Major Jonas Andersson, *op. cit.*, p. 24.

³¹Figure taken and adapted from Major Jonas Andersson, *op. cit.*, p. 24.

For determining the own's and enemy's CoG, Milan Vego proposes eight steps and at the end of them it result CoGs but not before being subjected to „*validity test*”³². Important to note is that because following this process results two CoG, every step must be analysed from the perspective of two separate point of view: own's and the enemy's.

This process is described as follows:

Step 1: Determine which objectives should be achieved.

Step 2: On the basis of the specified objectives, determine the military situation.

Step 3: Analysis the military situation from the point of view of operational factors (time and space).

Step 4: It shall draw up a list of critical factors (those elements of the physical – tangible or intangible – moral which are essential for achieving of objectives).

Step 5: From the list of factors above, it is establishing critical strengths (which are not assimilated with critical capabilities, concept defined by Joe Strange) and critical weaknesses (which can be assimilated with the critical requirements and with critical vulnerabilities defined by Strange).

Step 6: Critical strengths from the list set out above, will be reviewed and removed those that can not constitutes the CoG candidates.

This analysis is done considering integrating, protecting and supporting elements of operational factors (time and space) and that, if they can pose a threat to the enemy's CoG, it constitutes the own's CoG candidates, and those elements that are not threatening to the same enemy's CoG are used later to identify the methods of protecting own's CoG or in identifying methods of indirect approach of enemy's CoG. In addition, critical weaknesses setted on step 5 and the critical strengths that are not shaping up to be the possible CoG candidates setted on step 6, can provide the information necessary to the establishment of critical vulnerabilities. Giving this explanation, there is a inadvertence in the completion of this step whereas Milan Vego uses of enemy's CoG as a reference point in determining those own's CoG candidates when he asserts that the enemy's CoG is determined only after preceeding through the eight stapes and not before being validated by subjecting it to the validity test. Perhaps it would be more correct to say that critical strengths will be examined and those which impede the attainment of the enemy's objectives and not posing a threat to the enemy's CoG, would become possible own's CoG candidates.

Step 7: It lists those critical strengths which may be possible CoG candidates established in step 6.

Step 8: From the list of CoG candidates established in step 7, it proposes which would be the most important and which would outline in CoG (own's – to be protected, and the enemy's – to be attacked). The proposal becomes valid after the proposed CoG is subjected to the validity test:

1. „Does the candidate perform the primary action (critical capability) that achieves the objective?”³³

2. „Or is it supporting, used or consumed in the execution of the action?”³⁴

These two questions must be addressed from the perspective of both own and the enemy's perspective and the answer to the questions must be positive, otherwise (negative answer) is reviewing the critical factors established in step 4.

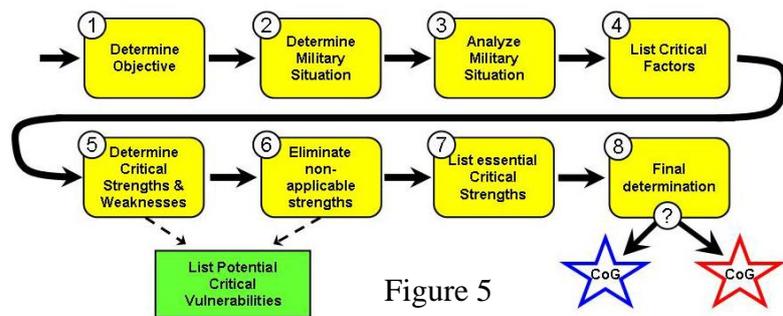


Figure 5

³²Dale C. Eikmeier, *Modernizing the Center of Gravity Concept- So It Works*, US Army Command & General Staff College, 2014, p. 24.

³³Dale C. Eikmeier, *op. cit.*, p. 25.

³⁴*Ibidem*.

Milan Vego specifies that the method provided is one of principle and planners, in addition to this method, should must use operational knowledges, the ability of understanding the concepts the own judgment and intelligence, all of them representing the ingredients of a proper process for determining CoG.

7. GODZILLA³⁵ Method proposed by military analyst James P. Butler who, based on the essential factors of the CoG established by Milan Vego, namely critical strengths and objectives, determines the CoG using a method called Godzilla Method, because he consider that Godzilla, as a mythical character, was involved in both the production of damaging of own forces and in defending them against other antagonistic characters. This method involves analyzing all critical strengths in terms of achieving the objectives as follows: every possible CoG (critical strenght) is removed from the list and analyse if by removing own forces or the enemy can achieve the objectives set out.; if the answer is yes then that CoG candidate is not a valid CoG and if the answer is negative then becomes a viable CoG. Further, with a CoG so determined, planners continuous analysis to determine, on the basis of critical weaknesses and critical vulnerabilities, how to attack enemy`s CoG or to protect own`s CoG.

Those stated above may be incorporated into a model based on four steps, thus:

Step 1: Identifies the strategic end state;

Step 2: Identifies strategic and operational objectives needed for achieving strategic end state;

Step 3: Identifies critical strenghts needed for achieving objectives;

Step 4: Each critical strenght is beeing examined if it can be a CoG or not. The examination shall be carried out in the light of the question if can be accomplished the objectives by removing that critical strenght. If the answer is positive than that critical strenght could not be a CoG; if in case of a negative answer than that critical strenght is a CoG.

An worthy example to be considered is the determination of ISIS`s CoG using Godzilla method. This can be expressed in the context of the construction of the graphs in figure³⁶ no 6. Thus, based on the Godzilla method described in those eight steps, from this figure we can deduce the following:

Step 1: The desired strategic end state is „*Islamic Caliphate is declared*”³⁷;

Step 2: The strategic objective which if it will be accomplished it will achieve the strategic end state is „*expand the borders and influence of that caliphate as far as possible, governing all its citizens under strict sharia law*”³⁸ and the operational objective which if it will be accomplished it will achieve the strategic objective is „*controlling land and people*”³⁹;

Step 3: The ISIS`s critical strenghts are identified as: ISIS leader in the person of Abu Bakr al-Baghdadi, ISIS forces, military capabilities and highly profitable sources of funding;

Step 4: If we remove the ISIS leader, can they (ISIS) achieve the operational objective? The answer is yes because the removal of Abu Bakr al-Baghdadi won't produce than turning him into a martyr and his followers will continue the actions started by Abu Bakr al-Baghdadi. If we remove the sources of funding, can they achieve the operational objective? The answer is affirmative as well, whereas their elimination won't produce than slowing to occupy new of territories by ISIS and controlling populations of these territories. In addition, ISIS will resort to other ways of obtaining funding, such as torture, robbery, blackmail. The

³⁵James P. Butler, *op. cit.*, accessed on 15.02.2017.

³⁶Figure taken and adapted from Daniel J. Smith, Kelley Jeter și Odin Westgaard, *Three Approaches to Center of Gravity Analysis The Islamic State of Iraq and the Levant*, articol pe situl <http://ndupress.ndu.edu/Media/News/NewsArticleView/tabid/7849/Article/607722/jfq-78-three-approaches-to-center-of-gravity-analysis-the-islamic-state-of-iraq.aspx> accesat la data de 30.01.2017.

³⁷Daniel J. Smith, Kelley Jeter, and Odin Westgaard, *op. cit.*

³⁸*Ibidem.*

³⁹*Ibidem.*

next critical strength analyzed is that of military capabilities and if in case of removing them can ISIS achieve the operational objective? The answer is also affirmative one, whereas ISIS having financial resources can procure armaments necessary from other sources and, so it would be a perpetum mobile which would not influence achieving the operational objective. The last critical strength represented by the ISIS forces is shaping up to be the ISIS's CoG and his removal it would be unable for ISIS to achieve the operational objective. Determining ISIS's CoG through Godzilla method, doesn't mean that those other critical strengths need to be neglected when we bring into discussion how to neutralize this CoG. Thus, if we can't neutralize the ISIS forces (direct approach) then planners must focus on actions to be taken on the other critical strengths so as to achieve their neutralization, will lead to the neutralization of ISIS's CoG (indirect approach).

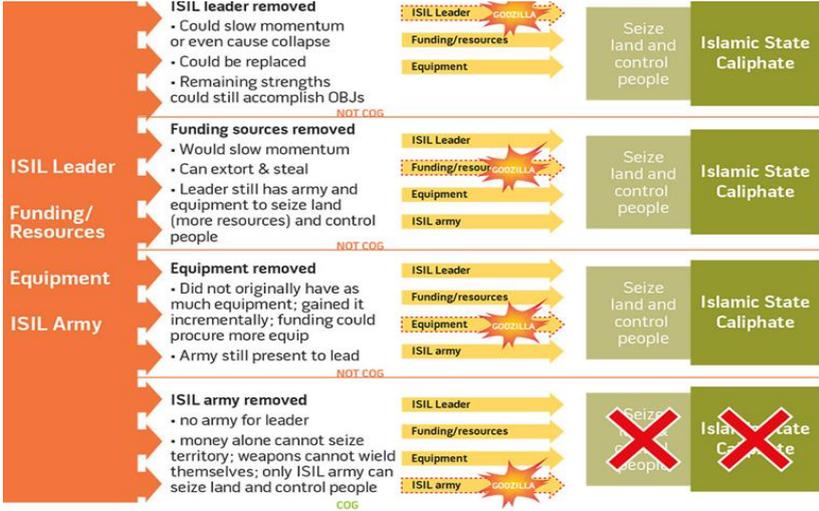


Figure 6

8. Method⁴⁰ proposed by Dale C. Eikmeier which, based on the critical factors listed by Joe Strange, suggests six steps, first four of them are for the determination of own's and the enemy's CoG, and the final two steps are for determining critical requirements and critical vulnerabilities. This method can be described as follows:

Step 1: Identifies the objectives needed for achieving the desired end state;

Step 2: Identifies all ways (actions) for achieving the objectives established. Select the ways that the organization in question, most likely will use for the achievement of objectives (based on IPB – Intelligence Preparation of Battlefield). These ways represent actions (essential capabilities) to be executed, so are expressed by a verb. Of these capabilities (or rather abilities) selects the essential capability that prevail, thus becoming critical capability;

Step 3: Establishes means/resources (essential requirements) necessary for the execution of capabilities available (abilities) set in step 2;

Step 4: Throughout the list of means/resources (essential requirements) established in step 3 select that entity (expressed by a noun – essential requirement) who possess critical capability (ability) determined at step 2 to achieve the objectives set out in step 1. This entity becomes COG;

Step 5: From the list of means/resources remaining in step 4, as a result of establishing of CoG, selects those who sustain CoG in order to be able to accomplish the critical capability (ability) as determined in step 2. These means become critical requirements of COG.

Step 6: Determine critical vulnerabilities associated with critical requirements of COG.

⁴⁰Dale C. Eikmeier, *Redefining the Center of Gravity*, articol accesat pe http://www.au.af.mil/au/awc/awcgate/jfq/eikmeier_redefine_cog.pdf la data de 26.01.2017.

As a result of completing the six steps for determining the CoG, it will become a valid CoG after it is being subjected to validity test „does/uses”⁴¹ by asking two questions:

First question: Can CoG candidate perform the primary action (critical capability) which will lead to achieve the objective? („does” test). If the answer is positive then the CoG candidate becomes a viable one.

Second question: Is CoG candidate being used or consumed during the primary action (critical capability)? If the answer is positive then CoG candidate is not viable and it becomes a critical requirement.

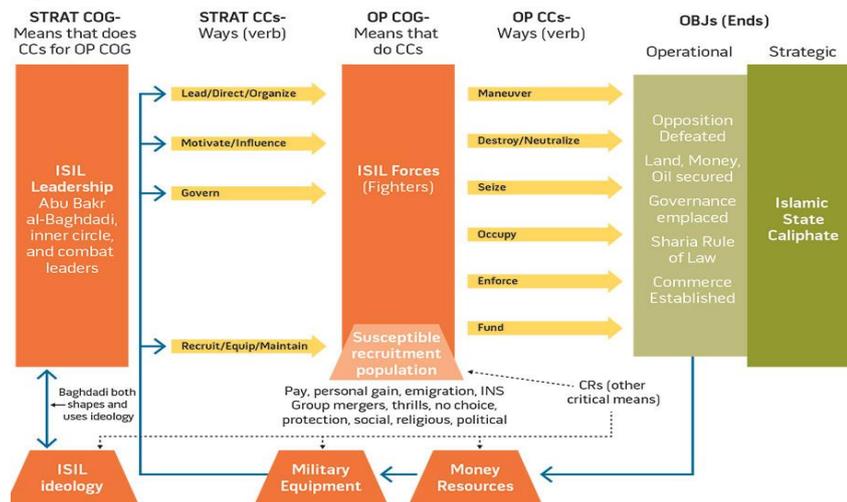


Figure 7

This validity test can be explained as follows: CoG candidate represents the mean (critical requirement) that possess the ability required to „do” action (critical capability) and „uses” other means (critical requirements) needed for „doing” that action?

An additional example in relation to the application of the Eikmeier’s method is regarding determining the ISIS’s CoG. Starting from the construction of the graphics displayed in figure⁴² no. 7, this can be expressed as follows:

Step 1: The strategic end state is Islamic Caliphate is declared and the objectives that lead to the fulfilment of this end state are: strategic objective – expand the borders and influence of that caliphate as far as possible, governing all its citizens under strict Sharia law, and the operational objectives whose achievement will lead to accomplishment of the strategic objective, are:

1. Neutralization or destruction of opposition forces (military or civilian) in Syria and Iraq;
2. Retrieving and securing the oil-rich territories in order to ensure the financial resources;
3. Ensure an effective governance in the occupied territories;
4. The imposition of Sharia law in the occupied territories;
5. Ensuring a profitable trade.

Step 2: The ways (actions – essential capabilities) possible for achieving the objectives laid down are:

- For the accomplishment of operational objectives:
 1. The execution of maneuver for carrying out offensive operations;
 2. Neutralization/destruction of opposition forces in Syria and Iraq;
 3. Employment/Take over of new territories;

⁴¹Dale C. Eikmeier, *Center of Gravity Analysis*, articol accesat pe <http://www.au.af.mil/au/awc/awcgate/milreview/eikmeier.pdf> la data de 26.01.2017.

⁴² Figure taken and adapted from Daniel J. Smith, Kelley Jeter și Odin Westgaard, *op. cit.*

4. Secure the territories taken over;
 5. The enforcement of Sharia law;
 6. Financing of the military operations and governance.
- For the accomplishment of strategic objectives:
 1. Command and control (C2) of the ISIS forces;
 2. Recruiting, equipping and maintaining an operational force;
 3. Motivating and influencing of new recruits;
 4. Ensuring governance in provinces, towns and occupied territories.

From these essential capabilities listed, these are critical: at the operational level – neutralizing/destruction of opposing forces, and at the strategic level – command and control of ISIS forces.

Step 3: The means available for carrying out the essential capabilities (skills) listed in step 2 are:

- At the operational level:
 1. ISIS forces (fighters) expected to be around 20,000-35,000;
 2. Military equipment: ISIS forces possess military technical equipment that range from individual infantry weapon until the bombs, anti-aircraft missiles, artillery pieces, tanks, armoured and light vehicles;
 3. Sources of funding consist of oil traffic from the occupied territories, warned other illicit activities, and external funding resources;
- At the strategic level:
 1. The leadership: ISIS has a clear-cut leadership structure and a leader in the person of Abu Bakr al-Baghdadi – a declared caliph – which have a cabinet of advisors that includes two deputy leaders, one for Iraq and one for Syria and other 12 local governors with supporting staffs.
 2. Will to fight: the ISIS ideology represents a moral factor used by the leadership in recruitment action ISIS and in psihomorale weaknesses manifested among members of terrorist organizations. Also, on the basis of ideology, ISIS draws new recruits with promises of financial reward, housing and protection. These recruits are either people eager for adventure or personal earnings, or insurgents being at peace with the situation of not being able to pick something else, whether other communities who have surrendered and who were forced to join ISIS in order not to incur severe consequences.

All these means listed in step 3 are becoming essential requirements.

Step 4: From the analysis made that one of these essential requirements set out in step 3 becomes critical, and at the same time, the ISIS`s CoG thus:

- At operational level, the essential requirement that has the ability to make critical capability determined in step 2 is represented by ISIS armed forces. This critical requirement – ISIS armed forces – becomes a CoG candidate at the operational level;
- At strategic level, the essential requirement which has the ability to make critical capability determined in step 2 is represented by leadership – Abu Bakr al-Baghdadi and his inner circle. This critical requirement becomes a CoG candidate at the strategic level.

Step 5: From the list of the essential requirements referred to in step 3, if we eliminate critical requirements set out as the CoG candidates at operational and strategic level it is derived that other essential requirements are becoming critical requirements in support of the CoG candidates which will achieve objectives established for the operational and strategic level.

Step 6: Critical requirements set in step 5 should be analysed in order to identify critical vulnerabilities in the following suggestive manner:

- If part of the ISIS forces, which are forced to join the organisation, would have other options perhaps that they would surrender to fight anymore. These options could be to:

ensure the safety of the persons concerned, the elimination of blackmail, to ensure law order that respects the moral and material values;

- Also, removal of external funding resources and securing oil fields could have the effect of diminishing the will to fight;
- Coagulation of all communities who do not agree with the application of Sharia law would produce major deficiencies in its governance of the occupied territories;
- The lack of air support of operations carried out by the ISIS forces represents an opportunity to execute targeting for neutralization of these forces.

For the CoG candidates determined at step 4 to become viable it should be subjected to validity test „does/uses” by answering to the question „*Is the mean (critical requirement) who possess the ability required to „do” action (critical capability) and „uses” other means (critical requirements) needed for „doing” that action ?*” thus:

Factor	„Does/Uses”	Explanation
CoG candidate at strategic level – ISIS leadership		
Will to fight	No	Will to fight is an intangible element that might not achieve the objective set by its self. The leadership of Abu Bakr al-Baghdadi and his inner circle are the ones pursuing to achieve objectives set and they its self have that will.
ISIS Leadership	Yes	Tangible element that possesses the ability to accomplish an objective and use that will to fight.
CoG candidate at aoperational level – ISIS forces		
Sources of funding	No	Sources of funding cannot conquer, by its self, new territories such as Islamic Caliphate to be done. ISIS forces uses resources to support military operations.
Military equipment	No	Military equipment represents, obviously, a critical requirement for ISIS forces to have the ability to achieve objectives.
ISIS forces	Yes	ISIS forces are those who possess the force necessary to achieve the action and use other elements for the completion of the action in question..

Therefore, as a result of completing the validity test, it becomes evident that at strategic level CoG is represented by ISIS leadership who have the ability to carry out command and control (C2), recruiting, equipping and maintaining an operational force, motivating and influencing the new recruits and ensuring governance in provinces, towns and occupied territories; at operational level, ISIS forces are CoG, because they have the ability to accomplish the maneuver of offensive operations, destruction/neutralizing opposition forces, occupy new territories, securing the territories occupied, applying Sharia law and financing.

CONCLUSIONS

Operational art can be manifested both in carrying out an operational design and determination of Center of Gravity. The latter is characteristic of, chiefly, specific operations of the war. In operations other than war, the center of gravity may be missing but, in these circumstances, this can have some consequences, as difficulties in achieving the desired end state, leading us to the idea that the center of gravity as justification does not mean that it

doesn't exist but may not have been visualized all the features of the operational environment. Therefore, the existence of the center of gravity within the design can fit it in time and space – operational factors well defined early on in the beginning of planning process.

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DEFINITIONS OF CENTER OF GRAVITY – EVOLUTION AND INTERPRETATIONS

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Abstract: *The complexity and importance of the Center of Gravity is reflected in the quality of preparation and understanding of the phenomena that describe armed conflicts characterized by an ever-changing geostrategic scene. In the present paper we bring to your attention a few definitions of the Center of gravity as they are set out both in the specialist literature as well as in military doctrines, and interpretations of these definitions with regard to linking with the effects that it can have on existence or unexistence of a center of gravity.*

Keywords: *center of gravity, schwerpunkt, critical strenghts/weaknesses, critical capabilities, critical requirements, critical vulnerabilities.*

„In war there are none but particular cases; everything has there an individual nature; nothing ever repeats itself.”

Ferdinand Foch – Marshall of France (1851 – 1929)

Introduction

The operational design represents a doctrinal methodology to be implemented by the application, on the basis of rational thinking, the operational art. Is the answer that provides by the operational art to question „how” when you realize the design of an operation which, in turn, help the commander, in a way, how to meet operational objectives and end state desired by using a appropriate methods to facilitate the elimination of operational environment uncertainty. As a result, the final outcome of using operational art, during the process of elaboration of operational design, consists of an operational approach to how military capabilities will carry out actions for the attainment of the desired end state approach manifests itself in intention and directives forward to the officers planners by commander.

On the other hand the center of gravity helps the commander to realize the connection between the understanding of the operational environment and the method of use of the military capabilities using an operational approach. If the operational design, realized through the use of operational art, helps commander to identify the problem that must be solved, the concept represented by the center of gravity allows him to visualize aspects that need to be addressed in the context of the problem.

The evolution of the center of gravity`s definition

In his book „*On War*”, Carl von Clausewitz, describes for the first time in Book Six, the concept of „*schwerpunkt*” as „*a center of gravity is always found where the mass is concentrated most densely*”¹, and in Book Eight alludes to „*one must keep the dominant*

¹Maj Seow Hiang Lee, *Center Of Gravity or Center of Confusion: Understanding The Mystique*, Maxwell Air Force Base, Alabama, April 1999, p. 12.

characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends...the point at which all our energies should be directed"². All these interpretations lead us to consider the nature of the center of gravity as possible represented by military force, a town or a leader, or a moral type CoG – the common interest of allies or public opinion.

Before exposing several definitions of the concept of „center of gravity”, we consider that it is important to analyze the evolution of the concept „*Schwerpunkt*” used by Carl von Clausewitz, as the source of all subsequent definitions. Although the German translation of the term „center of gravity” is „*gravitationspunkt*”³, the evolution of the translation of the term „*Schwerpunkt*” from what it meant in the past, „*focus of effort*”⁴ at „*the center of the whole power and action*”⁵ can be described as:

1. *Schwerpunkt* – the main effort or concentration of effort-described by Carl von Clausewitz;

2. The mid 19th century, *Schwerpunkt* is described as the capital of the adversary as a focus of effort. German and Austrian army used this term to describe the main line of effort linking the place of operations to the enemy's capital (the capital being understood as his main target);

3. Later, in the 19th century, this concept is associated with the portion/section of the front where most of the enemy forces will be engaged in a decisive manner. From this moment the initial term it no longer makes sense as „*target*” but the „*direction*”. This meaning emerges from the war plans of the Prussian feldmarshal Alfred von Schlieffen and German military theory of that period.

4. In 1874 Colonel J.J. Graham translates into English the work of Clausewitz, giving for the first time, the meaning of the term *Schwerpunkt* as „center of gravity”;

5. After World War I is still used meaning of „*direction*” for main planning effort;

6. In 1976 the work „*On War*” is translated again by Michael Howard and Peter Paret which will provide the meaning of the concept of *Schwerpunkt* as „*Center of Gravity*” defined as „*the center of the whole power and action*”.

Starting from the translation made by Michael Howard and Peter Paret, the concept of „center of gravity” begins to get shape agreed and adopted by specialized literatures in different countries, making it the permanent new meanings that reflect the operational environment continuously change.

Therefore, this concept is adopted, for the first time, by the U.S. Army in 1986 when in FM 100-5 „Operations” is defined as being „*sources of strength or balance. It is that characteristic, capability, or locality from which the force derives its freedom of action, physical strength, or will to fight*”⁶. From this definition it follows that a military force is not a CoG but that the characteristic element (expressed through an adverb or adjective), capability (expressed by a verb) or location (expressed by a noun) can be established as CoG (center of gravity). In conclusion, it was enough that the officers to identify vulnerability or requirement as a source of power, and, therefore, a CoG.

In 1993, the U.S. Army retrieves the definition given by Michael Howard and Peter Paret considering center of gravity as „*the hub of all power and movement upon which everything depends. It is that characteristic, capability, or location from which enemy and*

²*Ibidem*, p. 12.

³Colonel Dale C. Eikmeier, *Modernizing the Center of Gravity Concept- So It Works*, US Army Command & General Staff College, 2014, p. 6.

⁴*Ibidem*, p. 7.

⁵*Ibidem*, p. 8

⁶*Ibidem*, p. 9.

*friendly forces derive their freedom of action, physical strength, or will to fight*⁷. The difference between this definition and the previous one lay in the fact that planners should identify from all requirements and vulnerabilities laid down, that requirement or vulnerability considered to be critical – CoG, which depends on the conduct of operations. Looming, so for the first time the term „critical” to mean „most important, on which depends the success”.

The first doctrine JP 1-02 „Department of Defense Dictionary of Military and Associated Terms” adopted in 1994, the center of gravity was defined as „those characteristics, capabilities, or localities from which a military force derives its freedom of action, physical strength, or will to fight”⁸. It finds here the plural elements which confer power to a military force so it is recognised that there may be several requirements and vulnerabilities as CoGs.

Following the amendment of the definition of center of gravity occurs also in JP 1-02 Edition 2002 where is defined as „those characteristics, capabilities, or sources of power from which a military force derives its freedom of action, physical strength, or will to fight”⁹. It is noted that the term „locations” used in the definition of 1994 is replaced with the term „sources of power” which provide planners the possibility to search sources of power not only in the military area but also in the context of other instruments of power (diplomatic, economic and civil).

A final amendment to the definition of the center of gravity was made in 2006 when the same doctrine rely „the source of power that provides moral or physical strength, freedom of action, or will to act”¹⁰. This amendment consists in removing the whole string of „characteristics, capabilities, or sources of power” and keeping only the term „source of power” (in the singular), as well as replacing the term „will to fight” with term „will to act” outlining so from the previous definition namely that a source of power can be represented by an entity outside the military sphere, perhaps even intangible in nature. Although this definition, in the current form it is provided by the U.S. Army's military documents, NATO, in AJP 01 (D) maintain the 1994's definition namely „characteristics, capabilities or localities from which a nation, an alliance, a military force or other grouping derives its freedom of action, physical strength or will to fight”¹¹.

Contemporary interpretations of the centre of gravity`s definitions

Next it is important to outlight some strategists`s attempts who, on the basis of military training and experience in various theaters of operations, have tried to defined center of gravity in order to avoid ambiguity, to be logical, clear and precise and to provide solutions that reflect the operational environment conditions.

Colonel Tim Keppler, military strategist and career officer in the US Army, defines the enemy`s CoG as „the ultimate source of power and strength that, if neutralized, would prevent the enemy from achieving his aims”¹² and our`s CoG is also „source of power and strength that enable attainment of our own”¹³. What does not he describe if it is our CoG would be or not used to neutralize the enemy`s CoG.

⁷*Ibidem*, p. 10.

⁸*Ibidem*,

⁹Colonel Dale C. Eikmeier, *op. cit.* p. 6.

¹⁰*Ibidem*, p. 11.

¹¹*** AJP-01(D), *Allied Joint Doctrine*, NSA, December 2010, p. 5A-1.

¹²Lieutenant Colonel Tim Keppler, *Center of Gravity Determination and Implications for The War Against Radical Islamic Terroris*, U.S. Army War College, Mar 2005, p. 12.

¹³*Ibidem*.

Colonel John A. Warden III known for planning the air campaign during the Gulf War (1990-1991) defined the center of gravity as „*the point where the enemy is most vulnerable and the point where an attack will have the best chance of being decisive*”¹⁴. Based on the theory stated by Carl von Clausewitz, John Warden assimilates center of gravity not with a source of power or with a critical strenghts, but with vulnerability.

Dr. Antulio Echevarria, U.S. Army former officer and former director of research within the Institute of Strategic Studies in the period 2004-2013, brought the contribution to the analysis of the different types of conflicts through the concept of center of gravity. Thus, he states that „*CoG is not the strength, not the source of strength and not a weakness. CoG is what holds the enemy’s force together. CoG is the “focal point” that holds the system together, but only exists if there is a certain degree of connection*”¹⁵. In other words, there is a CoG in the enemy’s system if certain relationships manifests, also it is some interdependence and connectivity between the military capability and operational environment. The number and nature of CoGs depend on the degree of connectivity and unity which manifests itself in these capabilities, such as specified Clausewitz thus own forces must concentrate their energy in order to eliminate enemy’s CoGs. To sum up what Antulio Echevarria said it can be put in a logical manner so:

1. CoG-ul is a focal point and not a critical strenght, critical weakness or source of power;
2. CoGs are found only where there is sufficient connectivity between different enemy capabilities, connectivity that leads him to act in a unified manner, just like a living organism;
3. CoGs have the required centripetal force the enemy to behave as a whole and neutralizing the CoG would produce results in a collapse.

Dr. Joseph Strange former professor at the Strategic Studies within the Marine Corps War College and Richard Iron with a rich military experience in the past and a professor at the US and UK Staff Colleges, have contributed to the understanding of issues related to the concept of a center of gravity through the publication of numerous articles in the military field. In the paper signed by the two professors and titled „*Understanding centers of gravity and critical vulnerabilities*”, they defined center of gravity as „*physical or moral entities that are the primary components of physical or moral strength, power and resistance. They don’t just contribute to strength; they ARE the strength. They offer resistance. They strike effective (or heavy) physical or moral blows. At the strategic level, they are usually leaders and populations determined to prevail. At operational and tactical levels they are almost invariably specific military forces*”¹⁶. Therefore, Dr. Joseph I. Squeezes and Col. Richard Iron acquire and develop the exchange of idea of Clausewitz that CoG can be of a physical nature – human and material resources, production of goods and services for the defense and army and herds of subsistence of the population centres of political and military leadership, communications infrastructure – or moral nature – values, traditions, habits, psychological traits peculiar to a nation that give power to resist, the will continue the fight and keep the unity and cohesion of the army and the civilian population in the face of the opponent's attacks. Very important is the fact that these two kinds of CoGs (physical and moral in nature) are interdependent.

In the light of previous operations (e.g. Gulf conflicts), as it may be considered moral CoG capital because it constitutes not only an administrative center but also a center of social, professional, political, and its capture may have a significant impact on the spiritual

¹⁴Major Jonas Andersson, *Center of Gravity Analysis – an Actual or Perceived Problem ? – Thesis*, Swedish National Defence College, 2009, p. 6.

¹⁵*Ibidem.*

¹⁶Dr. Joe Strange, colonel Richard Iron, *Understanding centers of gravity and critical vulnerabilities – part 2*, Joint Force Quartely, National Defense University, Washington, p. 7.

component having the effect of deterrence or surprise. The leader or public opinion can represent also a moral CoG, and a great nation with a strong will can represent a critical capability when a people with a weak will can be a critical vulnerability. In other words, you can destroy the army force, the infrastructure even occupy the territory of a state – physical CoG – but if nationalist spirit of the population will still alive then you can't claim that you achieved absolute victory to assume a lasting peace. So in order to achieve this aim it should be to you in view of the moral side by destroying spiritual strength.

Also, the two professors believes without a doubt that tangible (abstract) CoG is represented, in most cases, by *people* who would be able to rise and support the moral strength. The term „*people*” used here does not relate to the whole population of a country but only in certain segments as: *leaders* who through their qualities can mobilize the entire population, *the ruling elites* – closed groups made up of personalities who have power to decide and impose who will be the leader of the state and *certain segments of the population* who does not give up the fight against any opponent after the army was defeated. As a result, in order to achieve peace and not just to win the war, it must be identified and neutralized both the CoG of the physical nature (tangible) and the abstract (intangible) since both represent the active agents who will try to destroy the permanent both capability and will of the opponents.

In conclusion, the theory presented by Joseph Strange and Richard Iron complies with the theory setted by Clausewitz relating to the center of gravity to be regarded as dynamic agents that can strike effectively. Moreover, these agents may also show characteristics related to physical (tangible) agents – abstract (intangible) agents. It can exist at all levels of the military art and at every level there may be one or more CoG bound being the existence of an opponent and the ever-present threat of failing to achieve the objectives set out.

Another illustrious teacher from Joint Military Operations Department within the Naval War College is Dr. Milan Vego which addresses the concept of CoG in his book entitled „*Joint operational warfare: theory and practice*”. He defined center of gravity as „*a source of “massed” strength – physical or moral – or a source of leverage, whose serious degradation, dislocation, neutralization, or destruction would have the most decisive impact on the enemy’s or one’s own ability to accomplish a given military objective; tactical, operational, and strategic (theater-strategic and national/alliance/coalition) centers of gravity are differentiated; each center of gravity is related to the corresponding military objective to be accomplished*”¹⁷. Vego says that there may be both CoG with military character and nonmilitary character and which include intangible or tangible factors. In this regard, at strategical level (political or military), due to the fact that more often the objectives are a nonmilitary nature, it follows that CoGs have nonmilitary features and include intangible factors compared to lower levels (operational and tactical) where objectives are purely military, so CoGs have military characteristics. For example, the non-military leader might outline in a CoG nonmilitary nature that could have as intangible factor – will to fight. At the operational level, a Division could be a CoG with military character posing as tangible factor – the level of mechanization, and the intangible factor – high moral due to food, equipment, financial satisfaction.

Also CoGs may not exist without being determined, first, the objectives. In other words, it never will be determined, first, CoGs, and then will set objectives. Correctly it will start with setting objectives and then will determine the CoGs that will lead to achieving objectives. If the CoGs are not determined in conjunction with the objectives then the commander and his staff will not be able to answer three essential questions relating to the ends, ways and means. For each objective there is a CoG established but it should not be

¹⁷Major Jonas Andersson, *op. cit.*, p. 20, apud: Milan Vego, *Joint Operational Warfare: theory and practice*, 2009, p. GL-4f.

confused with the objective itself nor decisive points/conditions. Regarding the factors of a CoG at the strategic level, they have the ability to pose a threat to the CoG of the strategic level of the opponent, and the operative and tactical levels even have the ability to put in jeopardy the corresponding enemy CoGs.

At the same time, Dr. Milan Vego argues that a CoG, in its entirety, can be equated with a cell, being composed of a core and the cytoplasm as seen in the figure¹⁸ below.

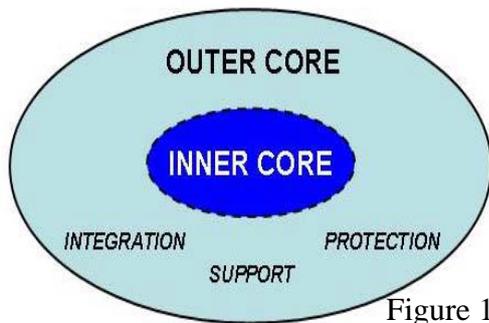


Figure 1

The main source of power lies in its core and his elements of integration (operational environment), protection and support is in its cytoplasm. Of note is the fact that the two components, as well as to a cell, functions as a whole, its core may not function properly if the cytoplasm is insufficient in function. At political level, integration elements could be considered a political system, values and cultural and social traditions, while at military level (strategic), these items can be found in C2, military doctrines or C4ISR. The protection elements at political level could be considered the armed forces, force categories with internal tasks and with role in ensuring national security or at military level (strategic) protection elements can be the capabilities of air defense, capabilities for force protection or national security. The support elements outside the core can be: at political level – diplomacy, economy or the media and the population and at military level (strategic) – the ability to collect information, logistics or support capacity for firepower.

In these circumstances, at strategic level, the intangible (abstract) CoG's core can be considered the will to fight, ideology or legitimacy actions, and if considered tangible (physical) nature, it can be identified the skills considered to be firepower or maneuver skills.

With all the above, planners must take into account the fact that the conditions of the operational environment may change continuously even while an operation is taking place which leads to modification of critical strengths (critical capabilities) and critical weaknesses (critical requirements) resulting in changing CoG's previously established. This involves a constant process of reassessment of the effects achieved during the operation.

Colonel Dale C. Eikmeier, strategist and career officer in the US Army with extensive experience in joint operations, defined the center of gravity as „is the primary entity that inherently possesses the critical capabilities to achieve the objective”¹⁹. Giving this definition, Eikmeier test the validity of it by the following criteria:

1. Clarity (if the definition is formulated in simple terms) – meets this criteria as they refer an entity that can perform an objective, unlike other definitions which relate to a source of power – element inaccurate and may have different meanings;

2. Logic (it contains logic rules that can be deduced from the definition) – logic expressed in this definition can be constructed so:

A (primary entity) + B (critical capability to achieve an objective) = CoG.

Also logic rule can be expressed by the following questions:

- What is the objective?
- How can this be achieved? (necessary capability – expressed by the verb)
- Who has this capability?

3. Precision (unambiguous) – accuracy of this definition is given by using the term „primary” and not to other terms such as secondary, in support. If something is secondary or in support of something than that entity is a critical requirement and not a CoG;

¹⁸Figure taken and adapted from Major Jonas Andersson, *op. cit.*, p. 21.

¹⁹Colonel Dale C. Eikmeier, *op. cit.*, p. 15.

4. Testable (it can be tested using logic rules) – the test logic rule is „Does/Uses”²⁰. In other words, the CoG has the ability to „achieve” an objective; if something „uses” for „achieving” one objective, then that entity is not a CoG but a requirement.

Compared to other definitions, Eikmeier eliminate the intangible nature of a CoG thus reducing ambiguities. Intangible characteristics such as public opinion, the will to fight or the morale of troops do not have the skills themselves to take action; thus, these characteristics are converted to the requirements. In this regard, some examples are noteworthy:

➤ An idea is an intangible element that emerges from a book, brain or media sources – possible CoG's (candidates) – tangible elements which are amenable to targeting;

➤ Police do not target speeding – intangible element – but persons (drivers) – tangible element – who have the mania to exceed the speed.

So, according to Col. Dale C. Eikmeier a CoG is always the tangible nature that can execute an action, that can carry something – in this case an objective.

FM 3-0 Operations and NWP 5-01 Navy Planning take the definition of a CoG as it stressed in JP 1-02 2006 edition and recognize that, in the current operational environment, it can not be limited only to a military capability (as were the cases of classic conflicts) but may be liable physical (tangible) or abstract (intangible). A tangible CoG, such as a capital, a military capability or a set of military capabilities can be easily identified, assessed and attacked; instead, if a intangible CoG – the support of the people, the national will, the ruling elite, religious tradition, tribal influence or even national strategy – are hard to determine due to the dynamic nature and human involving. In this situation, only the use of military means is inefficient requiring thus the involvement of all the instruments of power in a permanent.

CONCLUSIONS

Reviewing all definitions of center of gravity, one can see a number of similarities and differences of nuance reflected in the training and experience of those who have expressed but, in the end, all of them accept the idea that this concept is assimilated to the power of an organization, entity, system.

To highlight these similarities and differences, we categorize these definitions based on five criteria:

1. Class definitions focus on „requirements/vulnerabilities” – the definition formulated by John A. Warden. This definition attempts to express the importance of vulnerabilities which if it will be neutralized the whole enemy or our system will get into collapse. Also, this type of definition is specific to the Air Force and the Marines who embraces the idea of avoiding the clash strength versus strength in case of conflict of attrition assuming more maneuvering actions. However, this definition is not clear whether the vulnerability is something that will lead to the collapse of the enemy or simply just that is easily to attack. And furthermore, it is not express if CoG can be physical or abstract in nature. If it is an abstract CoG, how it will achieve its targeting?

2. Class definitions based on „focal point” – the definition formulated by Antulio Echevarria. Also it is an ambiguous definition which does not provide more information on the characteristics of the focal point, what keeps the system integrated and how it would be properly treated. However, Antulio Echevarria mention a quite important issue, namely, that not all conflicts is necessary to have a center of gravity;

3. Class definitions based on „strength” – the definitions of Colonel Tim Keppler and Joseph Strange/Richard Iron. These classes of definitions are much closer to what Clausewitz expressed, on focusing on those points of concentration of forces; so CoG is synonymous with

²⁰Colonel Dale C. Eikmeier, *Center of Gravity Analysis*, article accessed on <http://www.au.af.mil/au/awc/awcgate/milreview/eikmeier.pdf>. on 24.01.2017.

„center mass” whose neutralization can cause wear in a conflict. Also this definition accept the existence of a abstract CoG but only at a strategic level and tangible CoG only at operational and tactical level;

4. Class definitions based on „source of strength” – the definitions of Milan Vego, FM 3-0 and 5-01 NWP. It outlines strict connection between the CoG and objectives to be achieved and extend, as in the case of 3rd class definitions, of research throw the all power instruments in order to determine the CoG;

5. Class definitions based on „primary entity” – the definition of Dale C. Eikmeier. It is a definition that provides the ideal conditions of a logical, precise and testable formulation. Also Eikmeier mentions, leaving no room for doubt, that a CoG is only the tangible nature as only such an entity can perform an action that would result achieving an objective.

Noted that differences in the definitions of center of gravity have different perspective regarding the execution of actions by different branches, such:

– Air Force generally choose an approach of targeting as a result of the flexibility and versatility of air power, describing thus CoGs in terms of operational and strategic level targets in theater;

– Special Forces specialized in methods of penetrating the target in theater, prefers attacking the enemy where he is more vulnerable. Therefore, this kind of forces describe the CoG in terms of vulnerabilities and not in sources of power;

– Army forces as a result of numerous herds, of time and space to maneuver, do not encounter difficulties in determining the CoG in term of source of power focusing effort to have a direct approach for neutralizing that CoG;

– Naval Forces, as the Army, defines the center of gravity within source of power but takes an indirect approach regarding neutralization and prefer to attack vulnerabilities, as in the Special Forces.

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MEDIA TERRORISM AND CYBERNETICS

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Abstract: *Information aggressions are not new. Development of information infrastructure, which includes media structures with communication possibilities of increasingly sophisticated transmit information in an ever accelerating rate and the greater distances. The novelty consists in using the results of scientific research, designing messages so that they have the desired effect and using manipulative media messaging. Whatever type of confrontation, superior strategic thinking maximizes the advantages and minimizes the disadvantages, and exploit the opponent's weaknesses.*

Keywords: *aggression, terrorism, security, information, defence, media*

By dangerousness that has gained in recent years, international terrorism has become a particularly serious problem. This issue worries the political governments around the world, but also the peaceful population of the planet. The contemporary world has showed an alarming and unprecedented expansion of the scourge called "international terrorism", which has become a phenomenon threatening international peace and security. After the Cold War world order and international politics have entered a phase of transformation, even larger than the one generated by great revolutionary events in world history: in 1789, 1815 or 1919¹.

Definitions of terrorism are numerous and highly diversified. Some definitions consider this as being a normal response to "viruses" into societal systems and upsetting value systems, other places it within the extreme forms of manifestation of human violence, and most consider it a phenomenon of social pathology, i.e. abnormal reaction, asymmetrical, even atypical and generally totally disproportionate to progress, to evolutionary trends of societies. Of course, these definitions have their own importance, as they analyze in various ways, a phenomenon - the phenomenon of terrorism - and place it in a social ontology also very diverse and complex.

The psychological confrontation is a form of confrontation that had an important role in the wars in all historical periods, but its role will be considerably increased in future wars. This type of confrontation uses diverse strategies as psychological influence, deterrence, terror, and diversion and it is conducted through media networks specifically created for this purpose, the existing networks, particularly through television channels and internet, but also through physical means, (weapons and ammunitions with psychological effect, or substances that are used for this purpose).

The term comes from the Latin *terror*, the „*terror-terroris*” words, and has military connotations. Terrorism was used by the Roman legions to impose their law, scaring the population and thus forcing her into submission. Hitler also had an extremely favorable attitude towards terrorism. One of the principles that guided him and that he sets out in "Mein Kampf" was that that the only way to win easily against reason is the terror and force. The first attempts to define terrorism legally occurred during "International Conferences for the Unification of Criminal Law" through his Quintilliano Saladan, which introduced in 1925, in the Academy of The Hague, the concept of "international crime" (which includes in its definition the crimes against human rights and the crimes against heads of foreign states or

¹ Teodor Filip, „*Teroriștii printre noi*”, Editura. Obiectiv, Craiova, 2001, p 43

diplomatic representatives). Due to the inability of states to agree on the definition of "political crime" or to know exactly what constitutes a terrorist act, four international conferences have failed to define terrorism. During the conference in Copenhagen in 1935 the terrorism was defined as a voluntary act committed against life, physical integrity or health or liberty of the officials; any act that endangers a community, creates a state of terror in order to change the public authorities or hinder its activities, or seeks the disturbance of international relations.

The first "Conference of the League of Nations for preventing and punishing terrorism" that took place between 1935-1936, adopted the definition of terrorist acts as criminal acts directed against a state so conceived and designed as to create terror in the minds of people, particular social groups or public opinion.

Terrorism has a very wide range of goals, objectives and cannot be reduced to what one might call social pathology. But he is a product of human society, comes from within civilizations and presents itself as a passage to the limit as a sum of negative accumulations.

The battle for resources, information and globalization of the economy - both the "positive" one necessary and useful for people, nations and states, and the "negative" one profitable only to the underworld, for crime, drug trafficking, etc., creates some of the strangest effects.

Terrorism presents itself as a social phenomenon extremely complex, consisting of spectacular manifestation of violence, in order to attract attention, to frighten, tantalize and impose a certain type of behavior, sometimes simply to terrorize, through a wide range of actions in which the man is both weapon and victim, executioner and condemned. Terrorism has causes and effects. It looks like an iceberg that threatens not only what is seen, but rather what is not seen.

Terrorism is terrorism and, perhaps, we should not break it into pieces to categorize and analyze it in parts, but as a whole, as a phenomenon. One of the main features of modern human society is its dependence on computers, ie the globalization of information, the act of communication in general, and on this basis, the growing interdependence in particular. In other words, human society tends to go toward a global system, but open and unstable, whose foundation is built and consolidated on the information and its systems of values. Therefore, it is likely that in future, the terrorists will choose their targets within the information domain, from the common value systems of the world and especially from the value systems of nations.

The confrontation in the information domain will be undoubtedly a continuous and fierce one. Manipulation of information was always performed. What is new is the informational domain – the capacity of the sensors to keep under the control and surveillance the entire planet, to „see” everything. This kind of confrontation in the information domain is both physical, because it aims to destroy the information sensors and the communication channels of the opponent, but also virtual (in cyberspace) because it aims to achieve the informational supremacy. He, who owns the information, owns all. One's will cannot be imposed unless the informational supremacy has been achieved. I

The terrorist attacks on information could target:

a) Physical destruction of technical systems of communication, especially networks, nodes and clusters of target state, of international institutions that promote or support the antiterrorist war, other structures and bodies that enforce order and stability in countries and in the world;

b) Destruction of computers and networks through viruses especially in the economic, financial and military domains;

c) Piracy takeover of command and control systems and causing serious conflicts and even some unimaginable disasters;

d) Establishment of structures and special cyber-terrorist networks to operate in the cyberspace;

e) Widespread practice of electronic piracy, etc.

This is not about the mechanism (for the most part predictable) of the information and media war, but about terrorist actions. Although it is very difficult to have a clear distinction between this type of information war (which appears to be permanent) and information terrorism, there is still a quite clear separation between them: terrorism aims at the physical destruction, in the name of ideals or of messianic "vocation", creating extreme situations that lead to terror the population and the political leadership (has, therefore, in most cases, a political objective), while the information and media war (even if they also have a political objective) seeks, according to the principles enunciated by Sun Tzu two and a half millennia ago, to win as much as possible without physical destruction, to achieve the strategic information supremacy, usually without destroying systems and, especially, without losing human lives. Information warfare consists of a system of coherent actions, which are interrelated, conducted at strategic scale, based on a concept developed and controlled by the political factor, whereas terrorism in the information, media and psychological domains has no logic, no consistency; it is chaotic, fragmented by interests, attitudes, ideals, slogans, beliefs, mentalities, etc.

No country in the world, not even the US, can provide security by themselves and this for two reasons:

a) The information globalization, the unprecedented development and proliferation of weapons systems and means of destruction;

b) The omnipresence and omnipotence of asymmetric threats, especially the endogenous, which is moving its centre of gravity in the information domain, later possibly in the ecosystem and even genetics, directly affecting the intimate mechanism of human life – the hereditary information, the nucleic acids.

From here, the future will set up probably a reaction system which will be based on shifting the emphasis on other ways of waging war. What will be the tomorrow's threats? And, accordingly, which will be the configuration of the future war? Terrorism - especially in the cyber informational domain - seems to be only a first sign that configures, briefly but significantly, the size of tomorrow's confrontations.

Media terrorism has two aspects: the one of using media by the terrorists to achieve their violent, criminal goals, and the one of terrorizing the population by institutions or media representatives. The events of 11 September 2001 in the United States - major terrorist actions – allowed, in contact with a so cruel and unimaginable reality, the start of a real media terrorism. Viewers around the world have seen dozens and dozens of times the hitting of the Twins Towers, have distinguished - under the explanation suggested by commentators - in the smoke the sinister figure of the devil, *"the press has brought to the fore the quatrains of Nostradamus about Apocalypse, leaving enough space for any other interpretations."*² When the information related to a media event become the "exclusive propriety" of several media groups, as happened in many cases, terrorizing and manipulating the public opinion has a very wide field of action. Images, photographs, data, "hot" statements are seized, they can be faked, amplified or minimized or even hidden from the public and so on. If we were to see again on television the Summit of the Americas in Quebec in April 2001, we would immediately notice the images of a besieged settlement „occupied by massive security forces, and this happens, say some of the journalists in the field, because the authorities managed through several media to convince the world that terrorist actions will happen in the city.”³

² Simion Boncu and Valentin Stancu, *Concurență și congruență în imagine, the Modern Military Spirit Review*, No.1 / 1994, p. 18.

³ Ion Bodunescu, "Terorismul – fenomen global", Tipo Alex Publishing House, Bucharest, 2002, pp. 67-68.

Justification of intervention was made through the means of media terrorism: invoking the probability of the use of violence by a minority group of protesters (in the opinion of many, composed of simple manipulators), demonizing their image by creating a picture of a genuine street brothel.

With the complicity of the media, it has been induced the idea of imminent attacks against heads of state attending the summit conducted by the "men in black", the peaceful urban atmosphere has been poisoned, some elementary freedoms and democratic rights were violated. "The media terrorism stems from the possibility of manipulation through media"⁴, from the possibility of having "live" negotiations between terrorists and law enforcement representatives even on national television networks that helps to popularize the cause of terrorist groups in the media, thus attracting other sympathizers from among peaceful people. It also stems from the proven capability of modelling the national and international opinions, by exacerbating violence through the use of the images that match reality (more credible), the positively or negatively distorted images, the desirable, undesirable, virtual (no correspondence with reality) or subliminal images, or the self-image. The American and international public opinion was heavily shocked and convinced of the need for the conflict in the Gulf, for example, by the declaration of a young Arab students (actually the daughter of the ambassador of Kuwait to the US), that she had seen Iraqi soldiers were cutting oxygen hoses that fuelled incubators with premature born children in a Kuwaiti maternity, they took them out of incubators and left them to die naked on the floor of the hospital. This image (as found later by a Canadian documentarist, Nel Doherty) was made up by the Hill & Knowlton firm, for ten million US dollars received from an association comprised of members of the Kuwaiti government and senior US officials⁵.

The idea that "one TV image has more impact than 10,000 words" (James R. Schlesinger) cause the reaction to the sufferings of the masses in Bosnia, Somalia, Tien-An-Men Square etc. to increase considerably when promoted through media. To hide the truth or secret operations in many conflicts (Malvinas, Grenada, Panama, South Africa, and Rhodesia), the presence of the journalists in the combat zone was prohibited or restricted. The media manipulation techniques were used to justify a war or an anti-democratic dictatorial intervention, a genocide; they supported the aggressive armed actions, were focused on demonizing some leaders (examples: Milosevic, Clinton), have stressed the dehumanization of the opponent accusing him of war crimes (Bosnia), have attracted the opprobrium of the public opinion, have led to loss of confidence in the information given by the adversary through the media, sparked conflicts between parties, between ethnic groups etc.⁶

In such cases, the pictures are mainly used, but also the word, which launches force-ideas, themes, slogans, and propaganda well ordered in the crucible of the owners of the media means.

Media terrorism forms terrorists, propagates and calls to violence, but also breaks up families, destroy destinies, hits below the belt, making "revelations" exclusively to retain only what is more brutal, more shocking, what violates the eye, omits important details, imagines nightmare scenarios, does not retract and never apologizes. It is a mixer of manipulating through communication, which executes – live and on order – persons, personalities, institutions, states, nations which refuse to be dominated or want to dominate others, to be hit or cease hitting others, to hide the truth or to not lie anymore, to enroll in a particular group or to stand aside. In brief, it is a very insidious weapon that mass destroys consciousness,

⁴ *Ibid*, p. 69.

⁵ Simion Boncu and Stancu Valentin, Competition and congruence in the picture in the magazine *Modern Military Spirit*, No.1 / 1994, p. 19.

⁶ Eugen Lungu, Psychological influencing techniques in armed conflicts. Demonizing the opponent, the *Modern Military Spirit* magazine, no. 3/1999, p. 35.

converts consciousness, gives birth to and sustains monsters. It is the fundamental reason that it is required to be eradicated, banned through an appropriate legislation. The cyber confrontation is strictly linked to the confrontation in the information domain and represents its customized form. It should not be confused with hackers' actions - it consists of a system of actions that seek disruption, by all means, of the opponent's networks, but at the same time the protection of own networks.

The new type of war will be - in terms of armed confrontation - a modified version of the classic, well-known, state against state, army against army war. At least for the next few decades, it is becoming an asymmetric war, led by networks, having most complex and unexpected forms, into a very broad actions and reactions area in a multi - dimensional space, defined, among others, by the confrontation in the information, cyber, psychological, cosmic, economic, and diplomatic domains.

In an optimistic perspective, in the future the armies will increasingly serve the will of the communities and will defend the wellbeing of humanity. They will be the force that will act as needed against violent entities that threaten stability, democracy, and social progress. Nowadays and in the near future, with its particularities arising from the evolution of the relations between states, the international situation is dominated by the search for a global strategy to counter terrorism, which has become - by its intrinsic violence - one of the most serious threats of the beginning of this century against global order, against civilization itself, making the international security even more fragile.

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BRIEF EVOLUTION OF ROMANIAN ARMED FORCES' LOGISTICS FROM THE BEGINNINGS TO THE PRESENT

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Abstract: *The article is the result of scientific research on the introduction of Logistics (Administration) as an independent body of the other services/branches in the Romanian Armed Forces. The authors refer to documentary sources that support the emergence of Logistics (Administration) and testimonies of those involved in historical acts of founding this military service.*

Keywords: *historic sources; military tradition; intendance; administration; logistics; military evolution; decisive role.*

The military history of our nation represents the connection between past and future, and the support of national consciousness during our perennial existence. The present itself and everything we are experiencing nowadays should revive, more than ever, our military past in order to show our people our origins, in other words, what and how exactly we have been doing things, starting from our historic origins, and also to emphasize our contemporary role and especially the role of the next generations, if we really want to survive as a nation on this mother-land inherited from our ancestors. The present itself is that sort of reason motivating us to study our national genesis, the traditions and accomplishments of our ancestors, to anchor our expectations, goals and ambitions deeply into our history.

We are all aware of what has been said for centuries, respectively that the nations which ignore or do not know their own history are meant to disappear. Starting from that and using a sort of parallelism, we can affirm that those domestic institutions of the state and structural organizations of its Armed Forces which do not follow the national traditions and destiny, which do not fundament their existence on the relevant historic facts, continuing by this that unique connectivity with the ancestors, are not able to strongly confront the destiny of the nation, and cannot face any potential difficulties they will be forced to confront.

We are not allowed to forget either our Latin origins and roots, or the fact that the mother-land was defended by our ancestor with their supreme way of sacrifice, translated in history into blood-shed. This is the reason and a duty for us, those living in contemporaneity, to celebrate in an appropriate way each important event, those game-changers, related to our military history.

Military Logistics, from its beginnings – when it was known as “Military Administration” – to present day, has constituted an important part of the Romanian Armed Forces evolution, and accordingly, we do believe that it should receive a well-deserved attention.

It has been said many times that logistics appeared in the Romanian Armed Forces doctrine after 1995, even though there are papers which show that this notion has been used in their operational language and documents by the Romanian officers since 1938. The relevant

proof is one article, named „The intendance officer”, written by a former minister, Grigore Trancu-Iași, and published in the commemorating volume „The maintenance of the Romanian Armed Forces along history”, which emphasizes that logistics plays an determining role in the warfare time¹.

The significant questions are the following ones:

- Which would be the arguments to assume that logistics celebrates in 2017 its 155-year anniversary?
- How has it been evolving from 1862 to the present day?

Before the December 1989 anti-communist Revolution and its subsequent actions, in our country the term *Logistics* was not used at a very large scale. It was predominantly employed for those analyses related to the material/resources issues conditioning the preparedness and execution process of military actions conducted by the NATO states. Therefore, in the Military Lexicon logistics is defined as follows: “Term that is used in Western military literature to define the activity of material and technical support of the troops (troops feeding and equipping, any kind of technical and material supply) including their transportation along considerable distances. At the same time, *logistics* is considered a subdivision of the military art, along strategy, in charge with the movement and supply chain/system”².

The explanatory dictionary of the Romanian language (2nd edition, revised and completed in 2009) defines *logistics* as being “all the specific operations that assure the ongoing progress of an extensive activity (especially the military ones)”. There are other definitions that depict *logistics* as a feminine noun having its origins in the French language word *logistique*, respectively a „branch of logic which makes researches and is in charge with the application of the mathematic methods in the formal logic domain, in electronics, cybernetics, linguistics, etc.”³. However, there are many other relevant documents that consider *logistics* as a notion developed from the Greek language word *logistikos*, which defines somebody skilled in making calculations.

In accordance with *Le Petit Larousse* dictionary *logistics* has two different meaning: firstly, the one of mathematic logic, part of the modern logic, such as the combining actions, and secondly, the one of a „system of operations having as main purpose to allow armies to live, to move, to fight and to assure the evacuation and medical treatment of their personnel”⁴.

The word “*logistics*” for the military realm has a diverse spectrum of definitions. There are authors who believe that *military logistics* comes from the Greek word „*logistikos*”, by its content extrapolation coming from Antiquity, the art of calculation or the skill of making calculations, the artistry of assuring the armies with all necessary inventory. On the other hand, there are authors who believe that *logistics* in military comes from the word „*logista*” associated with the designation title of some clerks from Roman or Byzantine armies who were responsible of financial administration and camp and army corps supply⁵.

Moreover, the sociologist Ilie Bădescu is the one stating that the introduction of *logistics* in the military took place during the reign of the Byzantine emperor Leontos VI (886-911), “defining the whole number of organizational and supply measures capable to make an army win”⁶.

¹ Volum comemorativ, *Întreținerea Armatei Române dealungul timpurilor, apărută cu prilejul restabilirii destinului istoric al gospodăriei Oștirii Române și al aniversării a opt-zeci și cinci de ani dela introducerea intendenței în viața noastră militară și națională*, Tipografia Marelui Stat Major, București, 1942, p. 482.

² *Lexiconul militar*, Editura Militară, București, 1972, p. 37.

³ <https://dexonline.ro/definitie/logistica>

⁴ *Le Petit Larousse*, édition Larousse, 1984, p. 608.

⁵ Benone Andronic, Bixi-Pompiliu Mocanu, *Sprijinul logistic al grupării de forțe de tip divizie*, Editura Universității Naționale de Apărare „Carol I”, București, 2005, p. 9.

⁶ Ilie Bădescu, *Revista Sisteme logistice* nr. 3-4/1992, București, p. 18.

The first use of the term *logistics* is included in a military theory paper published in Paris, in 1938 - *Remarks on the art of war* - belonging to General Antoine-Henry, baron of Jomini, who said that “*the analysis of the art of war, in my opinion, consists of five purely military branches: the strategy, the big tactics, logistics, engineering art and the detail tactics (the small tactics). By logistics, Jomini understood the practical art of moving armies, the material side of military marches and formations, the establishment of non-fortified military camps and cantonments, or in other word the execution of the strategy and tactics combinations*”.⁷

Undoubtedly, these purely theoretical systematizations generated vivid discussions and controversies. Even Jomini himself was forced to specify that: „*There have been many useless controversies to determine, in an absolute manner, the demarcation line which separates these branches of the science; personally I said that strategy is the art of making war on the map, the art of enclosing the entire theater of war; tactics is the art of fighting in the terrain where the actual clash would take place, of putting forces in direct correlation with localities and to engage in action in different points of the battlefield... finally, logistics, in its essence, is nothing else than the science of preparing for or supporting the application of the other two.*”.⁸

Even though Jomini’s work had a big influence on many contemporary military leaders, the term *logistics* was not developed by these leaders and neither did it find any adequate organizational translation into practice.

Only later, around 1890, Alfred T. Mahan (1840 - 1914) introduced the term *logistics* in the US Navy doctrine. As a partisan of US expansionist policy, Alfred T. Mahan pleaded for the establishment of some naval bases, located in convenient positions, to allow both in peace and war time a total control of the main sea lines of communication, viewed as essential links of a logistic chain comprising the production industry and the alignment of the entire economy to the current necessities of military actions.

Inspired by the theoretical systematizations of Alfred T. Mahan, another person with naval background, George Cyrus Thorpe stated in his work *Pure Logistics*, published in 1917, that war is the result of a three distinct domains: strategy, tactics and logistics. For Thorpe, the logistic function is expressed by the capacity “*to provide all human and material means for conducting a war*”.⁹

Designated for the Naval forces system, *logistics*, in G. C. Thorpe’s conception, must comprise along its relatively accepted subdomains – supply, transportation, building and medical support – other domains such as finances, shipbuilding, ammunition production etc., together with the entire spectrum of economic aspects meant to support the preparedness and execution of US Navy military actions.

By World War Two (WWII), in England, the term used for *logistics* was replaced by the word *administration*, with a broad extension, including all military activities which were not directly connected to strategy and tactics. Meanwhile, in the USA, in the basic dictionaries, administration was explained by *logistics*, that it had also been attributed the unspecific meaning of management.

During WWII, the term *logistics* started to be used at a large scale, having insufficient clearly defining and delimited meanings, but suggesting all the specific activities of the military leadership, except the fighting itself.

The employment of this notion without relevant arguments determined the logistic branches of all three services of US Armed Forces to try to adopt in 1948 a unitary vision

⁷ Antoine-Henry, baron de Jomini, *Precis de l’art de la guerre*, édition définitive Paris, Ch. Tanera, 1855, gustavemar.free.fr/lire_jomoni.htm

⁸ Benone Andronic, Bixi - Pompiliu Mocanu, *op.cit.*, p. 10.

⁹ *Ibidem*.

over *logistics* that essentially was referring to all military activities regarding materiel supply and administration, satisfying the military personnel needs and necessities, and accomplishing the war cycle procurement.

Consequently, the USA was, of course, the country in which the notion of *logistics* was largely spread not only in the military domain, but even beyond its boundaries, sometimes with insufficient delineation. Beyond defining this concept, the USA has created a pragmatic and functional logistic system, which constituted the source of inspiration for the majority of the armed forces of the NATO states, the focus being on four major components: administration (management), supply, transportations and support services.

In our opinion, *Military Logistics* is the legitimate continuation of *Military Administration* that was established in the Romanian Armed Forces after The Union of Romanian Principalities under Colonel Alexandru Ioan Cuza's leadership.

Alexandru Ioan Cuza – the creator of the Union – signed that document ordering the settlement of a Military Administration body, which can be assessed as the birth certificate of nowadays military logistics. After the overall merging process of the war ministries of Moldavia and Wallachia, *High Decree no. 202* was issued *dated the 9th of October 1862*, decree regulating the organizational structure of the new Romanian Ministry of War. In accordance with the provisions of the above mentioned decree, the reorganization of the ministry consisted of a new structure – *Military Administration* – comprising “*The 2nd Directorate, general administration*”, which had in its structure Division 1 and Division 2. The former was organized in two sections, the 1st Section – *the personnel of the military intendance*¹⁰, *military transportation, military accommodation, uniforms and camping* and the 2nd Section – *hospitals, hospitals' personnel, subsistence*. The latter was also organized in two sections: The 1st Section – *payment, accountancy registers, internal administrations of the corps, financing and executive orders* and the 2nd Section – *general accounts of the budget, accounts regarding materials, pensions, laws and archives*.¹¹

In the lines below, we will refer a little bit more and with more details to the 1st Section - *the personnel of the military intendance*, clarifying an aspect which has currently been generating different opinions, respectively regarding the exact moment when Military Intendance appeared up in early Romanian Armed Forces.

The Paris Treaty, which was signed by all the major European powers in 1856 and would facilitate The Union of Romanian Principalities and, implicitly, the unification of their armies, was the trigger for the 1857 establishment in the Moldavian Principality army, as an independent body, of our military intendance.

This event, based on historic facts and realities, represents the founding act of this military branch, which enables us to proudly assert that without us, we the military experts and specialists in logistics, the life of the military cannot really exist. In this regard, we have discovered the documentary source of intendance in our Armed Forces and its undoubted reality.

Also, let us remember the fact that when one of the lower level commanders of the Moldavian Principality army (*Hatman* in Romanian) found out that the support of the troops under his command had not been assured in proper way, he hierarchically reported it in 1857 – that is 160 years ago – to the *Superior Headquarters of Moldavian Principality Army* (*Căimăcămie* in Romanian), proposing the independent establishment of a military body to support and take care of the army. Here is the clear way in which the establishment in the Moldavian Principality army of an “*Intendance Branch*” was requested in that historical year.

¹⁰ Alexandru Ioan Cuza had previously signed „Înaltul Ordin de zi nr. 29 din 1 februarie 1861” which really represents the birth certificate of *Military Intendance Corps*.

¹¹ Dr. Veronica Bondar, *Buletinul Arhivelor Militare Române, Studii/documente*, București, 2015, p. 3, www.arhivelenationale.ro/.../lista

By having the fundament and the justified reasons for introducing in the Moldavian Principality army structure such a branch, that has been already mentioned in the content of the this paper, the *Superior Headquarters of Moldavian Principality Army* provided the means for its establishment.

Through “24th Order, dated the 27th of April 1857, The Superior Headquarters of Moldavia approved the establishment of the intendance section in Moldavian Principality Army”, which created the foundation of the pure origins of Romanian military intendance.

Our domain, therefore, military intendance, has pure national origins and was established in accordance with a national initiative triggered by national needs, and was not, as it had been assumed so many times, borrowed or replicated after some foreign armed forces’ model.

Therefore, since 1857, the year of the first establishment in The Romanian Armed Forces of a special intendance body meant to assure its support, not only has this structure been kept in the reunited army, but also there a lot of efforts have been made for extending its structure and organization.

Historic evidence present the fact that, in 1860, the budget allocation of the reunited army of the United Romanian Principalities, incorporated the necessary personnel to lead the administration of the armed forces on the organizational basis of the 1857 logistics.

In 1860, after the Union of the Romanian Principalities under the common leadership of Colonel Alexandru Ioan Cuza, the officers of the French Military Mission designated for organizing the army, found an already established *Military Intendance* branch, assessed as not feasible enough in terms of size and capacity for the new form of organization.

The French officers, coming in our country in 1860, developed the draft for organizing the military intendance of the army, and this projection was presented to the empowered ruler, Alexandru Ioan Cuza, and by this it became legal through the “*High Order of the Day No. 29, dated the 1st of February 1861*” (additional note – also, published in Army Bulletin – *Monitorul Oastei* in Romanian – No. 11, dated the 16th of February 1861).

Consequently, it can be said that the Military Intendance of the Romanian Armed Forces, after being established in its early, pioneering from in 1857, following the studies of the French Military Commissions, it was established and initiated de facto at its full capacity in 1861, under the name of *Military Intendance Corps*.

The Military Administration would evolve as a well-defined structure, concomitantly with the modernization of the army and the development of its requests of logistic support.

During the Independence War, the Military Administration was included in the structure of the Grand General Staff functioning as an Administrative Section responsible for providing material and financial means to the Romanian Armed Forces. Additionally, this structure conducted close monitoring of the execution process, at the subordinating operational level units, of the executive orders issued by Grand General Staff, especially of those concerning supplies and provisions of subsistence and equipment.

At the Army Corp and division level intendance branches were established in charge with the supply activity of the subordinated units, and at the lower level the subsistence branch was introduced.

As distinctive entities providing services, at the mobilization date there were the following:

- The central warehouse for military equipment,
- The military bakery,
- 7 Railway Squadrons designed for the transportation of divisions and Army Corps¹².

¹² *Documente privind istoria României. Războiul pentru independență 1877 - 1878*, vol. II, Editura Academiei, București, 1986, pp. 229-232.

Just before World War One (WW I), The Military Administration increased its structure by creating new bodies for planning and supplying and transportation entities, as follows:

- The Intendance Directorate, established in 1912, as a central services structure;
- At Army Corp and division level, there were administrative branches, having in their direct subordination administrative parks and convoys and intendance and medical, responsible for the preparedness of supplying carriages and minor subsistence convoys, as well the treatment of the injured and sick personnel;
- At the division level – a services office (weapons, ammunition and gases service and engineering service);
- At each army level – a central warehouse and a mobile warehouse with organic bakery facility for campaign, and when army operations were conducted far away of the railway system a minor subsistence convoy;
- at each Army Corp level – a regional warehouse;
- at infantry and cavalry division level – a warehouse;
- at regiment level – a regiment train and a various number of supplying carriages;
- in the unit deployment garrisons – a garrison storehouse;
- during troop mobilization and deployment period – a warehouse on the marching lines;
- mobile warehouses on railway-platforms for satisfying the supply needs of the troops during operations¹³.

Between WWI and WWII a series of controversies were generated regarding the relation between Military Administration and Military Intendance.

In that specific period of time, the general opinion concerning the relation between Military Administration and Military Intendance was the following: *Military administration became a science that is connected with all the other sciences which, by providing for the human body and the army institutions, are enabling and continuously propelling progress. It is a science, because it is born from realities, having its own methods of application and creation. It is exactly what keeps the military alive, having under its administrative authority the entire army, and consequently the intendance bodies and structures.*

Intendance is a separate field, a branch of the larger administrative body of the army, designed for controlling, assessing, but not creating the administrative fact, which in accordance with the laws and its non-organic doctrine is the responsibility of the administration.

*Administration has a larger area of activity than intendance. It comprises the entire sustenance of the army, while the intendance only a few of its branches”.*¹⁴

In WWII, Military Administration faced some modifications imposed by the need of self-harmonization with the new alterations occurring in the Army structure, progress, and war realities.

In the organizational structure of administration at army corps level, territorial headquarters, division (similar structures) and units there were no structural modifications.

In the war time, the national territory was divided in the area of Army operations and the interior area. The former, made up of the operations area and stages area, at operational and tactical level units (army, army corps, division), and at stages headquarters there were intendance services, fuels and oils, quartering. Regiments had in their organic structure specialized entities for supplying (food, fuels, equipment, finances, quartering, sanitary services). Directly subordinated to these structures there were: subsistence warehouses,

¹³ Maior de administrație Anastasie Tomița Răzășul, *Gospodăria miliatră la români de la Dacia Traiană la România Reîntregită*, Tipografia Viața Literară, București, 1941, pp. 266 - 272.

¹⁴ Maior de administrație Anastasie Tomița Răzășul, *op.cit.* pp. 404 - 406.

equipment warehouses, mobile campaign bakery facilities, the bakery train¹⁵, the sanitary train, cattle parks etc. (at army level); warehouses for the Army corps units (at Army corps level); divisionary subsistence convoys, mobile warehouses, mobile campaign bakery facility (at division level); supplying carriages, a regiment train (at regiment level); supplying carriages, mobile campaign cooking facilities etc. (at small units level).

In the stages area there were mobile warehouses, subsistence small convoys, storage trains, mobile campaign bakery facilities, workshops and other services entities which assured the connection between the operation area and the interior area.

Within the latter, which comprised the national territory under the Ministry of National Defense administration, there were the industrial facilities, the military warehouses and storages and other sources that provided specific materials from the stages area.

Military Administration would face many structural modifications and alterations due to the Army modernization process, continuing to exist in the Romanian Armed Forces structure beyond after WWII.

Between 1945 and 1947, when under Soviet Army occupation the transformation process of the Army started (dismantling the Royal Army), Military Administration changed its name without any fundamental modification of its functional structure. In accordance with the provisions of Law no. 452, dated the 1st of June 1946 and of Law no. 205, dated the 1st July 1974, the structure of the General Secretariat of the Army Procurement and Administration comprised: The Superior Directorate for Procurement of Technical Materials; The Superior Directorate for Army Administration, Budgeting and Procurement with Intendance Materials; The Directorate of Military Warehouse, Workshops and Establishments; The Directorate of Military Domains and Constructions; The Directorate for Material Resources; the Sanitary-Pharmaceutical Directorate; The Veterinary Directorate; The Housing Directorate; The Financial and Control Directorate.

In 1947, the *Army Administration* was transformed in the *Army Back*, and in 1967, the *Army Back* was transformed in the *Army Services*, comprising under its umbrella all the activities of providing food, equipment, fuels and oils, technical and material, financial and medical coverage, constructions, accommodation, integrating in this way all the activities conducted in order to provide all the Army needs for the country defense preparedness process¹⁶.

Only in 1996, did the Army Services change their name becoming the *Romanian Armed Forces Logistics*, in the same year also being issued a subsequent regulation.

Military Logistics is defined as representing “...*the science of planning and executing the movement and supplying of forces; in its broader and comprehensive sense, comprising those aspects of military operations referring to: projection and development, procurement, storage, transportation, distribution, maintenance, materiel evacuation and their decommissioning and disposal; personnel transportation; procurement, construction building, maintenance, exploitation and decommissioning; procurement or services providing activities; medical support*”.¹⁷

If we are to compare the functional domains of logistics, as they are defined in the logistics regulation, with the functional structure of the Military Administration we can see that the differences are related to the stages of development and modernization of the Romanian Armed Forces and not to their essence that remains the same.

¹⁵ There two such trains, with a capacity of 40,000 bread rations each, in 24 hours, the production process going on while the train was moving. Data are taken from *Revista intendenței și administrației armatei*, nr. 6-7, iulie 1938, pp. 484 – 498; gl.lt.dr. Traian Dafinescu, col.(r) Ioan Boacă, *Serviciile Armatei Române*, Editura Militară, București, 1989, p. 323.

¹⁶ *Ibidem*, p. 342.

¹⁷ L-1, *Regulamentul logisticii operațiilor întrunite*, București, 2008, art. 1.

This is the reason for our strong belief that, as we have already stated before, nowadays Logistics of the Romanian Armed Forces is the continuation of the Military Administration established by the Ruler of our Union, Colonel Alexandru Ioan Cuza.

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ANALYSIS OF THE PROCESSES AND CHARACTERISTICS OF THE SOCIAL SECURITY SYSTEMS IN ROMANIA

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Abstract: *After the revolution, there have been realised many economic and social reforms. The economic reform made in the last years emphasized the differentiation of the household income, impoverishing people and decreasing the standards of living, the salary being the most important source of income for the most of the people.*

Analysis of the public health systems is based on understanding the concepts of health and illness and on their relationship to the health care and other factors that influence them, representing the modality of coverage of all risks, which threatens the employees and their families. These risks could lead to decrease or loss the earning capacity for covering the costs of illness, maternity and family expenses on account of salary contributions and aid provided by the state.

Key words: *health system, security systems, illness, health care, retirement age, social policies*

The health system in Romania is a model based on health insurance where medical services are correlated on the basis of contributions to the health insurance fund of the insured. It is represented by all medical structures, public and private organizations, institutions and mandated resources to prevent, maintain, improve and restore the health of the population. The state of health of a nation correlates with multiple dimensions of quality of life: income, employment, housing and utilities, equity and quality of health services, education and beyond. According to the World Health Organization definitions adopted in the last 30 years, the health of a man should not be limited only to the absence of disease but a state of prosperity both physical and mental and social.

By this modern definition, the individual health is closely linked to the concept of quality of life, more than ever. Currently, in the developed countries, based on this vision, the offer of the health services are combined successfully with the psychological counselling services or the social assistance, with the services to the domicile of the patient or efficient medico-social services for people with disabilities or people with other health and social problems at the same time. The social policies in the sanitary field are combined effectively with other types of social policy for a more adequate investment in the human capital recovery of that community.

In 1949, it was approved the Law on the health state system organization and followed a gradual transition to the Semashko health system. This system is based on the principles of universal insurance and on the free access to the services. The main features of the health system in Romania during these four decades were:

- State funding;
- Centralized planning;
- Rigid management;
- State monopoly on the medical services.

Activity of health care has an important influence on the national economic development. It provides satisfying the primary needs of the human to be healthy and of the society to have a healthy population. At the macroeconomic level it contributes in a specific way to ensure the reproduction of the workforce and of the general welfare of that country.

Achieving a correct radiography of the health insurance system in Romania is useful and opportune at the same time, because it represents a timeless theme. The health has the profound implications for the social and economic life of the country, so it requires detailed analysis of the social health insurance system in Romania in the specific contexts, using a valid

and adequate methodology in the light of the factors that influence it, in order to propose the valid directions of the system reform.

Law on the system of pensions and other social insurance rights was adopted in 2000, and after five years the system was faced with several difficulties:

- weak financial support;
- efficiency of the system reflected in the standard of living of the beneficiaries;
- retirement age;
- dependency ratio.

The lack of money in the health system leads to the health “reform”.

Financial support: To diminish the base for supporting the pension system has contributed the several factors. Most importantly is given by decreasing the contributions to the social insurance fund by reducing their number and employees. From 8.142 million employees in 1990, it reached 4.749 in November 2016, according to the statistics published by the National Statistics Institute.

There were also delays to the payment of contributions.

Efficiency: In the table below it is show the number of pensioners and the average pension in January 2017

Table no. 1 *Pension system existing at the end of January 2017*

Category of pensioners	Number of pensioners	Value of the pension accordance with the decision -lei-	The average pension -lei-
TOTAL SYSTEM, of which:	5,073,339	4,744,745,334	935
- with periods worked in agriculture, of which:	1,067,601	333,386,682	312
- only period in agriculture	500,881	202,659,301	405
1. Age limit	3,832,992	4,046,306,697	1,056
2. Early retirement	23,056	26,796,430	1,162
3. Partial early retirement	74,848	51,835,048	693
4. Invalidity	604,451	357,568,065	592
5. Survivor benefit	537,573	262,136,995	488
6. Social aid	419	102,099	244

Source: National House of Public Pensions

In January 2017, the total number of pensioners was of 5,073 million people, while the number of employees totalled 4.749 million people, registering thus about 1.07 retired to an employee, according to statistics released by the Ministry of Labour and Social Justice.

Retirement age: Romania's population aging was accelerated, the number of Romanians over 65 years getting to exceed that of people under 14 years with more than a quarter of a million people, reveals the latest data from the National Statistics Institute.

Decreasing the number of young people and increasing the share of older people are due to declining the birth rates and increasing the life expectancy as a result of medical progress and improving the quality of life. Medium and long term consequences can be very serious, especially on the labour market, terms of pensions and the health insurance.

The number of pensioners increased, many coming early retirement, but some continued to work cumulating income from pension and salary, others to illness because of the slackness with which medical commissions entitlement to illness retirement, the number of employees decreasing, being unable to face the pensioners.

Governments have adopted measures and the employee contributions were increased. To try to maintain the real value of the pension it was resorted to indexation, which will reduce the negative effects but large differences have occurred in the pension amount that were put in the program of the realignment the pension. The system keeps the principle of distribution, so, the funds made are redistributed for paying its obligations.

There are several types of pensions:

- retirement pension, paid to insured individuals who have achieved status of contributions and retirement age;
- early retirement;
- partial early retirement requiring with five years before retirement;
- invalidity pension - for the insured who cannot work for some reason;
- Survivor benefit - to children, wife - the surviving spouse if the deceased person was retired.

Unemployment insurance is a means of financial support for people who remain unemployed and are protected by the state for a limited period depending on the each age. Specific measures of the labour market:

- increasing employment opportunities to a job;
- stimulate of the employees;
- preventing the unemployment;
- searching jobs;
- Providing the equal opportunities in the labour market.

Ministries and specialized bodies have as their objectives increasing the employment of the workforce. To combat unemployment, the employers are obligated to give advance notice of the employees to be made redundant. During unemployment, the unemployed must attend courses for training, retraining and professional training. The professional training of the unemployed is made taking into account the requirements of that time, the labour market perspective and the labour market demands. Unemployed persons, who are committed to a distance greater than 50 km from the town where they live, receive a premium of framing and installation, and those who are committed and are entitled to unemployment benefits, also receive an amount of money each month until the ending period of unemployment amounting to 30% of unemployment benefit.

Employers receive a subsidy from the state for hiring unemployed and have some facilities.



Source: www.economie.hotnews.ro

Health insurance

Romania's state of health is deteriorating. The causes of the condition are:

- smoking;
- improper nutrition;
- insufficient medical assistance;
- Health education.

The Law no. 145 on 24 July 1997, on the social health insurance was modified successively by several GEO until now. Principles of the health system based on the social health insurance are: solidarity, freedom of choice the physician by the insured, competition between the health providers, ensuring the quality of the services, respecting the patient and ensuring the confidentiality. Implementation of health care reform had several interruptions by the political changes: advances, stagnation, regression and reversals.

The health insurance system belongs to the Ministry of Health, County Health Departments, the National House, and County Houses for Health Insurance, Medical College of Romania, Ministry of Finance and Ministry of Labour and Social Solidarity.

The health care providers who have contracts with the County House of Pensions are: hospitals, polyclinics and specialty outpatient and diagnostic centres, medical cabinets and the family physician.

Financing the medical insurance system is based on the principle of solidarity and subsidiary for collecting and using the needed funds. The contribution rate gradually increased due to the budget deficits and to compensate the decreasing the number of the contributor.

Independent organizations are:

- College of Physicians in Romania
- College of Pharmacists in Romania
- Order of Romania Nurses and Midwives
- The two National Houses of Health Insurance in Romania

Many social groups have no access to the health care services:

- Dysfunctional families
- Families with many children
- People of Rroma ethnicity
- People who live in isolated rural areas and do not have money to access the health services
- Unemployed
- People without a steady income
- Elderly people
- Homeless people

An important factor in social and health insurance is represented by the people of Rroma ethnicity who emphasize the low access to the labour market and the poverty.

The number of members is very high, incomes are low, people who work in the family are few, there are recorded various forms of dropping out of school, children are used for farm work and begging, many families live in children's allowances or social assistance received from municipalities, many are illiterate, particularly the women that marry very young.

Lack of identity causes problems: cannot participate in the vote, do not receive benefits and social security benefits or social protection. About 10% of Rroma are employed.

One possible solution is a collaboration based on partnership with the local authorities for projects to their success in finding a job, create jobs for Rroma, organizing and conducting the training courses and their land reform.

There have been surveys on employers about their contributor position to the social security. Some have said that is a total ignorance; others lack of responsibility, very poor

organization, indifference and for each employed person the pay to the state about once salary. Employers prefer to hire fewer people with higher salaries.

Needs and problems felt and expressed by the interviewees are:

- Acute need for jobs
- Need for information to the job market
- Need information to employees' rights and employers' obligations
- Need for counselling for professional orientation especially of young
- Mistrust of the unemployed to find a jobs.

Health state in Romania and proposals for health system

Romania is among the countries with a high incidence of HIV and AIDS, syphilis, tuberculosis, compared to other EU countries.

Stroke and coronary heart disease are the main cause of morbidity and mortality in our country. Alarming is decreasing the age of drinkers and smokers.

Lack of education of the young people has led to an explosion of sexually transmitted diseases.

National House of Health Insurance (NHHI) and Ministry of Health wish to computerize the last medical cabinet and last pharmacy to connect at the network of NHHI, to compatible the systems, to security the data and the health cards issued.

The Romanian private sector health insurance is almost nonexistent. So far, only a few insurance companies have ventured to offer Romanians the policies that guarantee a humane treatment in hospitals without being bought with various "attention". Currently, the number of those who have made private health insurance is quite low, only a few tens of thousands at the national level. Besides these, there is another category, something wider, to those who have health subscriptions (almost 500,000 persons). However, the growth potential of the market is huge.

The objectives of health reform must aim to improve quality and access to services, along with improving the mechanisms of the cost control. Therefore, Romania needs more resources in the health system, especially in the social security component. The current situation - in which 6.8 million of taxpayers finance the expenditure with 19 million of policy holders - is not sustainable in the long term, especially if we take into account the certain trends of population aging and the trend of synchronization with the level of expenditure from EU.

Improving the quality and the access requires contracting of several medical service providers, encouraging competition between them, diversification the services, using more advanced equipment, property investment and higher salaries for health workers. However, this cannot be realistically achieved with current income of Unique National Fund for Health Insurance (UNFHI).

The budgetary impact of all proposals made to increase the public incomes in the healthcare system amounts to about 7.3 billion lei and 1% of GDP. The most of increasing comes from health insurance contributions to 13% and taxing all pensions to the full value. Also, an important proposal is to compensate the free health insurance of pupils and students with annual transfers from the state budget, quantified to 1.5 billion lei. It is true that the state budget awarded subsidies to cover the deficits of UNFHI in the last years, but their quantification were unpredictable and not transparent. Therefore, we propose waiving of this type of subsidies and replacing them with compensation of gratuities granted by law to the health insurance. Thus, the UNFHI incomes should be predictable and the expenditures should be multiannual planned within the limit of the resources.

The current framework for service delivery and expenditure of the health insurance system in Romania does not guarantee performance in exchange for the used resources. In contrast, the patient dissatisfaction is high and the waste is generalized.

Although the transition to a system of health insurance was a correct measure, Romania has not been aligned with European practices in the field, maintaining anachronistic structures and rules that decelerate its progress, nowadays. They should be removed so that the health services to be quality, accessible and financially sustainable.

The public health expenditure reform is all the more necessary, as in the medium and long term needs will not diminish, but will increase due to an aging population and creating new expectations from patients.

We share most of the recommendations made in this document and notice that began to be implemented in the last 2 years, under the pressure from the International Monetary Fund and European Union. Taking advantage of the resumption of consultations on a draft law on health reform there are analyzed the systemic important aspects that should be taken into account for developing the new legislative proposals.

The reform of the basic health services package appears to be the keystone for evolution of the social health insurance system in Romania. In brief, the basic package should be included only the essential services that can be financed with the proceeds achievable of the UNFHI.

In the last years, the balance between the expenditure needs and the available resources has been broken as a result of the economic crisis and the measures that have encouraged the consumption of drugs and services.

The basic package determines other reforms in the system: voluntary health insurance, need to increase the contributions quotas, review of pricing systems, efficiency the national health care programs, development of the primary care etc.

Because Romanians were accustomed to enjoy of quasi-universal health care it will be required a sustained information campaign to arouse interest in the hospital voluntary health insurance that represents the largest category of expenditure in any health care system. In the European Union, from the total health expenditure, it represents 37%. In Romania the situation is different: in the total health expenditure, the share of hospital services is over 40%. These levels are higher than in the most European countries.

The social health insurance system inherited an over-developed hospital sector and financial and institutional rules which encouraged further expansion. From the services perspective, this situation has caused underdevelopment of the primary care and financially, the multiplied expenses for the cases treatable in the outpatient.

Currently, there are about 350 public hospitals, most of which are subordinated to the local administration - about 250 - and the rest of the Ministry of Health and other ministries. For a long time the hospitals were seen as indispensable structures, but they were rigid and unreformed.

With the decentralization of their majority in 2010, the proposals to restructure the hospital system have gained a wider audience and open to change.

One of the main ideas promoted is privatization of the hospitals, and for this, the future draft health law will allow their transformation into commercial companies or foundations. Along with the compulsory private health insurance, privatization of the hospitals is a profound reform with major consequences for the quality of services and using of the resources.

We believe that prior to hospitals privatization, Ministry of Health and local authorities should continue reforms begun in 2010, especially those that intended to reduce the capacity of continuous inpatient and transferring the services toward the outpatient and daily inpatient.

Among the most important initiatives are:

- Merging the large and small hospitals under the same authority;
- Establish the structures and integrated services of management of several hospitals under the same authority (for example, a county council). At the same time, reducing the share of administrative and personnel costs by outsourcing of such services;
- Reducing the number of beds and internment, according to the National Plan of beds.

- Changing the charging system of Diagnosis Related Groups (DRG) on the case solved or medical services, so that the ambulatory and the daily inpatient become financially attractive for hospitals;
- Selective contracting by NHHI of the hospitals for medical services paid from the health insurance fund. The selection criteria should be more qualitative. Thus, the hospitals will be encouraged to improve quality services to maintain contracts with NHHI;
- sizing the contracts for medical services with NHHI, according to the estimate of the resolved cases during the current year and diminishing the share of capacity indicators to hospitalization and historians;
- Improving the monitoring activities of the hospitals budget execution in order to check compliance of the public finances rules and prevent the accumulation of outstanding payments. Publication on the NHHI or Ministry of Health website of the quarterly financial statements of all contracted hospitals, including the outstanding payments, assets and liabilities;
- Measuring and posting on the Internet the quality indicators for each hospital that is in a contractual relationship with NHHI

Any outside analysis of the health system in Romania encounters opacity of the Ministry of Health and NHHI, which publishes very little information they hold. The experience of democracy in our country shows, that in every field out of sight and evaluations of approved people of non-governmental sector or of the public, there are happened the major slippages.

Health is not an exception to this ascertainment, as are shown by the Fund's financial situation and very health and well-known practice in prescription drugs, hospitalization of fictitious patients, in the deliberate unrecorded of the bills of the compensated medicines etc.

NHHI has invested hundreds of millions of euro in the Integrated Information System of the health insurance, but on the website is not published any statistics on drug consumption, sales, prescriptions, medical services provided or settled, the number of admissions and so on. From time to time such information is squeezed in the press releases without presenting the problems to their true size.

If it were respected the legal provisions in force concerning the information to be published on the websites of NHHI, Ministry of Health, public health departments or the home county health, the knowledge of the processes and the medical system phenomena would reach more stakeholders which can make useful contributions to remedy the problems or improve the UNFHI activity.

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THE THREATS AGAINST ARMORED PLATFORMS IN THE HYBRID WARFARE

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Abstract: *The lack of certainty regarding future conflicts physiognomy in conjunction with pressures of higher production costs and massive cuts in defence budgets impose significant threats and challenges in the development and use of armoured platforms. Modern warfare requires new type of armoured systems that integrate newest technologies which, in turn, bring along new threats and challenges for them.*

Keywords: *hybrid warfare, armoured platforms, urban environment, antitank weapons, cyber attack*

The future of armoured platforms' challenges has a close bond with the conflicts' future physiognomy and tight conditioned by the lessons identified and learned from the consumed conflicts. The contemporary military analysts must solve the dilemma of future conflicts' architecture.

We are currently witnessing a metamorphosis of military conflicts, where old ways of conducting military actions, which include the use of old weapon systems (like RPG 7 or RPG 9) and old armoured platforms (as T-72, T-80, BMPs) cohabits with adapted tactics and procedures and improved weapon systems (as Merkava IV, UAVs) or even some relatively new entry systems like Trophy Active Protective System (APS), Javelin, Kornet, Spike or Unmanned Combat Aerial Vehicle (UCAV).

We also have a mix of doctrines regarding the use of conventional armed forces. There still are military structures which carry out manoeuvre approach actions, using armours in compact, conventional, traditional structures and formations, in wide open spaces, in combined arms concept. "When it comes to armoured warfare, especially tank and armoured vehicle tactics, many people, perhaps most, imagine massive clashes of steel monsters on the battlefield with hundred of machines fighting each other."¹

But on the other hand, there is a different approach, unstructured yet and little ambiguous, where armoured system are engaged against hybrid threats and use adapted tactics, techniques and procedures, which don't require necessarily a great fire power but a precise and a less lethal one, in terms of reducing collateral victims and avoiding psychological and informational effects in such conditions. If the protection, mobility and surgical fire power are essential conditions in the conventional warfare approach, for hybrid threats neutralization extra- challenges rise in terms of discovering the enemy on time, cyber protection of high tech battle management and command and control systems.

Consequently, we can affirm that lack of certainty regarding conflicts' future physiognomy, in conjunction with the constraints from the high production costs and massive cuts in defence budgets, of the main producers of military armoured systems, represents an essential threat to the development and use of armours.

Also one of the biggest threat and challenge for the armoured military systems is represented by the return of skirmishes and battles that use armours back to the urban environment. Fight against armours in the urban, densely populated areas is constantly growing. The volatility and the ambiguity which characterize localities with a high density of

¹ *The nature of future mechanized warfare*, 15 decembrie 2015, pe site-ul <https://aw.my.com/gb/news/general/nature-future-mechanized-warfare>.

buildings and people, is the perfect environment for hybrid actors, who prefer it for preparing and conducting actions against superior, conventional forces.

Hybrid actors will try to exploit the civilian population, in their advantage, using it as a human shield, which will make the use of armours' firepower very difficult and risky, if not impossible in some situations.

Using population as a shield for military actions carried out from markets, buildings, homes, schools and churches crowded with people, will cause, in most of the cases, a military response which (in case of armoured platforms use) will inevitably result in collateral victims. These victims will be then exploited by hybrid actors in their advantage again using social media (Facebook, Instagram, etc.) to victimize and demonize military forces that use armours. Non-governmental organizations, international media and other states authorities, ineluctably sympathizing with the victims, will pose a significant stress on policy makers and military leaders. This is also a challenge for use of armour against hybrid threats. Therefore solutions will be sought for proportionately diminished military response, with great impact on reducing the firepower of armours.

Another challenge for armoured military platforms, deriving from hybrid actors' favourite battle space is the three-dimensionality of the build-up areas. Combat space in localities with its three levels: underground, ground level and above ground, creates a difficult environment, where threats can come from any direction.

The urban environment has been and will remain a ferocious killer for unaccompanied armours. Using portable antitank weapons, from ground, above and underground represents vulnerability for armours that can be annihilated only by employing armours with attending troops. But, the presence of supporting and accompanying forces, specialized in urban fight, implies a greater risk and bigger logistic burden, which can also be considered a challenge or even a vulnerability, being given the zero tolerance for friendly forces, which invest in technology especially for reducing own victims.

Thus, although in urban areas armoured platforms can be effective due to penetration capabilities and increased passing capabilities, they become very vulnerable because the threat can show up from any direction and at any distance (especially very close ones) and from any type of weapon, including improvised explosive devices or Molotov cocktails.

The high density of building and narrow streets, represent also a challenge for armours. The reduced manoeuvrability for armour bring benefits for hybrid fighters which can neutralize high tech armoured system using old weapon systems which most of them hold in abundance.

Also cyber attacks on command and control systems and not only, represent a big challenge and threat for armoured military platforms. Modern armours are platforms that integrate the latest technologies and high precision fire power, interconnected within and with other systems. Surveillance and detection capabilities rely on the data communication and allow engagement of targets almost instantly. All these technological advantages depend on operating the software in safety and security. Compromising these systems through cyber attacks by hybrid actors, represents a key task in order to annihilate the advantages achieved with great financial, human and time effort.

Data transmission encryption and electronic warfare measures, which counter the adversary's jamming and allow for safe and secure data communication, are factors which help in countering cyber attacks that are present in the recent hybrid conflicts.

These are part of the threats that occur in the battle space and from the hybrid actors, but there are also internal threats that may affect the armour future use or development. These could arise from the states that own developed armoured systems.

The trend to consider them anachronistic and outdated may be considered a big challenge for armours.

The recent experiences in Iraq and Afghanistan where the main effort was on the counterinsurgency, highlighted the role of UAVs, airstrikes and use of Special Forces, casting the classical systems with a great fire power, like tanks and artillery, in the shadow. There are many military analysts who consider that the role of steel monsters in the context of hybrid conflicts is getting less important. This despite the evidence from recent Israeli actions in Gaza Strip in 2014, or ongoing actions in Syria where armoured platforms of all kinds play an important role.

The constant need for improved armour vehicle, new weapon systems, better C2 communication, led to more weight with great implications on mobility and less space inside the vehicle for troops. Identifying new solutions to meet new requirements of innovation, modularity and small mark on the field, is under the pressure of defence budgets cuts. There are supporters of freezing armour technology development until a revolutionary quality leap will occur (use of nano-tubes or nano-crystals in manufacturing the armour), arguing that for now, with current technology, no matter how much armour is added, it will be easy to build an anti-armoured weapon or even a stronger IED to penetrate it. “The manufacturing of tanks - powerful but cumbersome - is no longer essential (...). Submarines and long range-bombers are needed. Weapons such as drone - nimble and tactical - are the future.”²

In our opinion, giving up the capabilities of protection in order to increase mobility and accessibility in different operational environments is not a solution for two reasons:

- Hybrid threat has most often new-generation military capabilities provided by the states which interests are served, such as tandem missiles (Kornet, Spike);
- The conventional conflict’s risk dimmed especially because of the technological and informational disparity. By giving up the current powerful capabilities, the difference will reduce and will leverage the disparity. Consequently, this will lead to recurrence of conventional conflicts.

Thus we believe that trend waiver by powerful armies, for armour use, especially heavy ones, due to the peculiarities of hybrid conflicts and budgetary pressures, is an internal threat for armours. Technology alone cannot seize and maintain a piece of land.

Overestimation of the role of smart technology, the superiority of information and Special Forces constitutes a threat to armoured vehicles. Armoured systems must be improved and not removed by the new stars of hybrid warfare. “In the Army’s evolving vision of future warfare, cyberspace and heavy armour, advisor teams and tank brigades, soft power and hard, are complementary sides of a single coin. They go together like an iron fist and a velvet glove.”³

In conclusion, we can notice that urban areas characterized by volatility and ambiguity, with all that this entails (battle space on three levels, limiting the manoeuvre, the need for support forces) with cyber attacks on battle space management tools as well as uncertainty doctrine on the future architecture of the conflicts influences over the use, or not, of armour, represent vulnerabilities we have to take in account in planning and fighting future conflicts.

² Marjorie Censer, *The end of the tank? The Army says it doesn’t need it, but the industry wants to keep building it*, 31 ianuarie 2014, pe site-ul https://www.washingtonpost.com/business/economy/the-end-of-the-tank-the-army-says-it-doesn-t-need-it-but-industry-wants-to-keep-building-it/2014/01/31/c11e5ee0-60f0.11e3-94ad-004fe61ee_story.html.

³ Sydney J Freedberg Jr, *GCV and Beyond: How the Army is getting heavy after Afghanistan*, pe site-ul <http://breakingdefence.com/2013/03/gcv-and-beyond-how-the-army-is-getting-heavy-after-afghanistan/>

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ELEMENTS OF REFERENCE FROM THE OPERATIONALIZATION PROCESS IN THE ROMANIAN LEGISLATION OF THE ESSENTIAL INTERNATIONAL STANDARDS IN THE PUBLIC SECTOR

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Abstract: *This paper has been divided into 4 chapters: Key elements resulted from the International Accounting Standards in the Public Sector concerning the content and the format of the financial statements; Key elements resulted from the Methodological norms for applying the Order of Public Finance Ministry no. 1917/2005 approving the Methodological norms on the organization and management of the public institutions accounting, Chart of Accounts for public institutions and instructions for its implementation; Opinions of different specialists regarding the comparative aspects between the annual financial statements foreshadowed by the IASPS (especially IASPS 1) and those adopted in Romania by the Ministry of Public Finance; Conclusions and suggestions.*

Keywords: *Financial statements; Objectives of the general purpose financial statements; Statement of the financial position; Statement of the financial performance; Composition of the financial statements; IASPS*

Key elements resulted from the International Accounting Standards in the Public Sector concerning the content and the format of the financial statements¹

Financial statements are a structured representation of the financial position and financial performance of an entity.

The **objectives of the general purpose financial statements** are to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making and evaluating the decisions about the allocation of the resources. The objectives of the general purpose financial reporting in the public sector should be the offer of the useful information for the decision-making and the demonstration of the entity responsibility for its entrusted resources, by:

- a) Providing information about the sources, allocation and uses of the financial resources;
- b) Providing information on how the entity has financed its activities and has covered the cash requirements;
- c) Providing the useful information in assessing the ability of the entity to finance its activities and to honour its debts and engagements;
- d) Providing information on the financial condition of the entity and therein changes;
- e) Providing the useful aggregate information in assessing the entity's performance on the cost of services, efficiency and achievements.

General purpose financial statements can also have a predictive or prospective role, providing useful information in predicting the level of resources needed for the continued

¹ Council for the International Accounting Standards of the Public Sector, Handbook of the International Accounting Standards for the Public Sector, 2013 Edition, Vol.1, Translated and reprinted by the Body of Expert and Licensed Accountants of Romania, Bucharest, 2014, pp. 93-124.

activities, of the resources that could be generated by the continued activities as well of the risks and the associated uncertainties.

Financial reporting may provide to users the information: a) indicating whether the resources were obtained and used in accordance with the legal adopted budget; b) indicating whether the resources were obtained and used in accordance with legal and contractual provisions, including the financial established limits by the relevant legislative authorities.

To achieve these objectives, **the financial statements provide information about:** a) Assets; b) Liabilities; c) Net assets / equity; d) Revenue; e) Expenses; f) Other changes in the net assets / equity; g) Cash flows.

Responsibility for preparation and presentation the financial statements vary inside and across the jurisdictions. In addition, a jurisdiction may establish a distinction between the person responsible for the financial statements and the one responsible for approving or presenting the financial statements. Examples of people or positions that may be responsible for the financial statements of the individual entities (such as government departments or their equivalents) include the person who manages the entity (permanent director or executive director) and the director of the financial central (or the financial official as controller or chief accountant). Responsibility for the consolidated financial statements of the government as a whole is typically divided between the director of the central financial agency (and the financial director such as the controller or chief accountant) and the minister of finance (or his equivalent).

Components of the financial statements. A complete set of financial statements include: a) a statement of the financial position; b) a statement of the financial performance; c) a statement of net assets changes / equity; d) a statement of the cash flows; e) when the entity makes public the approved budget, a comparison of the budget amounts with the real ones either as a supplementary individual financial statement or as a budget column in the financial statements; f) notes, comprising a summary of the significant accounting policies and other explanatory notes.

Statement of the financial position may also be called the balance sheet or the statement of assets and liabilities. The statement of the financial performance can be called the statement of revenue and expenditure, statement of revenue, statement of the operating activity or statement of profit and loss.

In certain jurisdictions the notes may include the items named programs. The financial statements provide users with information on resources and obligations of an entity at the reporting date and the flow of resources between reporting dates. This information is useful for users to assess an entity's ability to continue to provide goods and services at a certain level and the degree of resources necessary to the entity in the future to be able to further honour its obligations to deliver the services.

Entities are encouraged to present the additional information to assist the users in assessing the performance of the entity, managing its asset and making and assessing decisions on the allocation of the resource.

This additional information may include details on the achievements and entity results: a) performance indicators; b) statements of the work performance; c) program analysis; d) other management reports on the achievements of the entity during the reporting period.

Entities are also encouraged to present information on compliance the legislation, regulations and other rules imposed from outside.

When information regarding the compliance are not included in the financial statements could be useful a **note** to refer to any documents that might include this

information. Knowledge of the non-compliance may be relevant in terms of responsibility and may affect the evaluation that is made by a user about the entity's performance and direction of the future operations. It may also influence the decisions about the resources allocated to the entity in the future.

The financial statements must present fairly the financial position, the financial performance and the cash flows of an entity.

A fair presentation requires the entity: a) to select and apply accounting policies in accordance with IASPS 3 - accounting policies, changes of the accounting estimates and errors. IASPS 3 sets out a hierarchy of guidance with norm value which the management consider in case of absence of a standard that would apply specifically to an item; b) to present information, including the accounting policies, in a manner that provides relevant, reliable, comparable and understandable information; c) to provide additional disclosures of information when compliance of the certain provisions of IASPS is insufficient to enable users to understand the impact of particular transactions, other events and conditions on the financial position and financial performance of the entity.

Statement of the financial position seeks to achieve the distinction current active /immobilized, respectively current debt/on long term. An entity shall present the current assets and immobilized assets and current and long term liabilities as distinct classifications in the actual financial position in accordance with the express provisions of that standard, except when a presentation based on liquidity provides information that is reliable and more relevant.

Actual situation of the financial position should include at least the items – row that present the following values: a) Tangible assets; b) Property investment; c) Intangible assets; d) Financial assets; e) Accounted investments for using the equity method; f) Inventories; g) Amounts recovered from transactions than those of change (taxes and transfers); h) Amounts recovered from exchange transactions; i) Cash and cash equivalents; j) Taxes and payable transfers; k) Liabilities from exchange transactions (excluding the specified values in the standard); l) Provisions; m) Financial liabilities (excluding the specified values in the standard); n) Minority interest, presented within net assets / equity; o) Net assets / equity attributable to the entity owners that controlling.

Statement of the financial performance illustrates the surplus or the deficit in the period. All items of income and expense recognized in a period are included in surplus or deficit, except for the case when in an IASPS provided otherwise. Normally, all items of revenue and expense recognized in a period are included in surplus or deficit. This includes the effects of changes in the accounting estimates. However, there may be situations where certain items may be excluded from surplus or deficit for the current period. IASPS 3 treats with two such circumstances: the correction of errors and the effect of changes in the accounting policies.

Actual situation of the financial performance must include at least the items-row that show the following values for that period: a) Revenues; b) Financing costs; c) Part of the surplus or deficit of the associated entities and the joint ventures accounted for using the equity method; d) Gains or losses before the tax recognized on the disposal of assets or on the settlement of liabilities that may attribute to the discontinuing activities; e) surplus or deficit. The following items must be presented in the actual statement of the financial performance as allocations of the surplus or the deficit in the period: a) Surplus or deficit attributable to the minority interest; b) Surplus or deficit attributable to owners of the entity who controlling.

Statement of changes in the net assets/equity is another important component of the financial statements of the public entities. An entity shall present a statement of changes of the net assets / equity highlighting the actual situation: a) surplus or deficit for the period; b) each item of revenue and expense for the period that, as required by other Standards, is recognized directly in the net assets / equity and the total of these items; c) total revenue and

expenses for the period (calculated as the sum of (a) and (b)), showing separately the total amounts attributable to the owners of the entity that controlling and to the minority interests; d) for each component of net assets / equity separately disclosed, the effects of changes in accounting policies and the corrections of errors recognized in accordance with IASPS 3 - accounting policies, changes in accounting estimates and errors. An entity shall also present, either in the statement of changes in net assets / equity or in the notes: a) the amounts of transactions with owners that acting in accordance with their status as owners, showing separately distributions to the owners; b) the balance of accumulated surpluses or deficits at the beginning and at the reporting date and changes during the period; c) to the extent that components of the net assets / equity are separately disclosed, a reconciliation between the accounting amount of each component of the net assets / equity at the beginning and the end of the period, separately disclosing each change.

Cash flow statement is another important component of the financial statements of the public entities. Cash flow information provides to the users of financial statements with a basis for assessing: a) the entity's ability to generate cash and cash equivalents; b) the needs of the entity to use those cash flows. IASPS 2 - Cash Flow Statements sets out requirements for presentation of the cash flow statement and the related disclosures.

Notes to the financial statements of the public entities are a very important piece in the reporting system and have a specific structure.

The notes shall: a) to present information about the basis of preparation of the financial statements and the specific accounting policies used in accordance with the express provisions of the standards; b) disclose the information required by IASPS sites that are not shown when the actual financial position if the actual financial performance, if the proper changes in the net assets / equity or the actual situation of the cash flows; c) provide additional information that is not presented in the actual statement of the financial position, in the actual statement of the financial performance, in the proper statement of the changes in net assets / equity or the actual statement of the cash flows but are relevant for understanding of any of them.

Notes are normally presented in the following order, which helps users to understand the financial statements and to compare them with financial statements of other entities: a) a declaration of compliance with IASPS; b) a summary of significant applied accounting policies; c) supporting information for items presented in the actual statement of the financial position, in the actual statement of the financial performance, if the actual statement of the changes in net assets / equity or in the actual statement of the cash flows in order they are presented each statement and each row-item; d) other disclosures, including: d1) contingent liabilities (according to IASPS 19 - Provisions, Contingent Liabilities and Contingent Assets) and unrecognized the contractual engagements; b2) non-financial disclosures, e.g. the objectives and policies of the entity for financial risk management (according to IASPS 30 - Financial Instruments: Disclosure).

Disclosure of accounting policies is also a very important component of the financial statements of public entities. An entity shall disclose in the summary of the significant accounting policies at least the following three elements: a) the base (or bases) of assessment used to preparation the financial statements; b) whether the entity has applied any transitional provisions in any IASPS; c) other accounting policies used that are relevant to understanding the financial statements.

The standards are presented and other issues relating to the specific elements that can surprise in this part of the financial statements referred to accounting policies.

Key elements resulted from the Methodological norms for applying Order of Public Finance Ministry (OPFM) no. 1917/2005 approving the Methodological norms on the organization and management of the public institutions accounting, Chart of Accounts for public institutions and instructions for its implementation

In this part of our paper we present general provisions on the financial statements of the public institutions in Romania, composition, their structure, principles and accounting policies used and the content and structure of the explanatory notes².

For the beginning we refer to the **general provisions relating to the financial statements**. For the public institutions, the official document for presenting the patrimonial situations under the management of state and administrative-territorial units and the implementation of revenue and expenditure, are represented by the financial statements. They are prepared according to the norms drawn up by the Ministry of Public Finance, approved by order of the minister.

The financial statements are prepared in the national currency or in lei, without subdivisions of the leu. To have information and to request international bodies it can be prepared the financial statements in a different currency. Preparing the annual financial statements must be preceded compulsory by the general inventory of assets and liabilities and other goods and assets under management, according to the rules issued for this purpose by the Ministry of Public Finance.

The financial statements are signed by the institution leader and the head of the financial-accounting section or other person entitled to fulfil this public function. Public institutions are obliged to submit to the state treasury units which have opened the accounts, statement of cash flows for visa on accuracy of the cash payments, account balances to availability, as necessary, to ensure the concordance of the public institution accounting data with the state treasury units accounting.

Public institutions whose leaders have the quality of authorizing officers secondary or tertiary, submit a copy of the annual and quarterly financial statements to the superior body, at the deadlines set out by it. Ministries and other specialized bodies of the central government, other public authorities, autonomous institutions and the territorial administrative units whose heads have the authority of credits and submit to the Ministry of Public Finance or to the general directorates of the public finance county and Bucharest where appropriate, a copy of the quarterly and annual financial statements, according to the rules and deadlines.

Units without legal personality, subordinated to the public institution organizes and manages the accounting of the economic and financial operations until at checking balance without preparing financial statements. Foreign activity in the units without legal personality, subordinated to the public institutions in Romania, is included in the financial statements of the Romanian legal entity and is reported in Romania.

Composition of the Financial Statements is very important in the equation of the financial reporting for public institutions. Quarterly and annual financial statements comprise: a) balance sheet; b) patrimonial result account; c) statement of cash flows; d) statement of changes in the structure of assets / equity; e) annexes to the financial statements, which include accounting policies and explanatory notes; f) the budgetary account. Balance sheet format cannot be changed from one financial year to another.

Next, we present the Balance structure that includes the following major components: A) ASSETS; B) LIABILITIES; C) EQUITY.

² Methodological norms for applying the Order of Public Finance Ministry (OPFM) no. 1917/2005 for approving the Methodological norms on the organization and management of the public institutions accounting, Chart of Accounts for public institutions and instructions for its implementation, published in the Official Gazette of Romania, Part I, no. 1186 and 1186 bis of 29 December 2005, with subsequent amendments and completions;

An asset is a resource controlled by the public institution as a result of past events, from which are expected to generate future economic benefits for the institution and whose cost can be credibly evaluated³.

Assets in turn contain the following components: **A1) Non-current assets:** Intangible fixed assets; Technical installations, vehicles, animals, plantations, furniture, office equipment and other tangible assets; Land and buildings; Other non-financial assets; Financial assets; Receivables (over one year); Total non-current assets; **A2) Current assets:** Inventories Receivables (under one year); Short-term investments; Treasury and bank accounts; Prepayments; Total Current Assets; **Total assets;**

A liability is a present obligation of the public entity arising from past events and whose settlement is expected to result in an outflow of resources embodying the economic benefits⁴.

Liabilities consist of the following components: Non-current liabilities: Liabilities (over one year); Long-term loans; Provisions; Total non-current liabilities; Current Liabilities: Liabilities (under one year); Short-term loans; Long-term loans to be paid in the current year; Revenue in advance; Provisions; Total current liabilities; Total liabilities; Net Assets / Equity = Total assets - Total liabilities;

Equity is the residual interest of the state or territorial administrative units, as owners of the assets of a public institution after deduction of all debts⁵.

Equity, in turn, contains the following components: Reserves and funds; Patrimonial result; Reported result.

Structure of the patrimonial result Account as part of the financial statements at the public entities in Romania consists of: Revenue and Operational expenses; Surplus (deficit) from operating activities; Financial income and expenses; Surplus (deficit) from financial activities; Surplus (deficit) of current activity; Extraordinary revenue and expenses; Surplus / deficit from extraordinary activity; Patrimonial result (surplus / deficit from current activity + / surplus / deficit from the extraordinary activity).

Operating income, in turn, consist of the following items: income taxes, insurance contributions and other revenue budgets, revenue from the economic activities; financing; subsidies; transfers; budget allocations with special purpose; other operating revenue; Total operating revenues. **Operating expenses, in turn, consist of the following positions:** salary costs and related contributions; subsidies; transfers; expenditure on stocks; works and services by third parties; capital expenditures; depreciation and provisions; other operating expenses; Total operational expenses. At the end of this part of revenue and expenses we position: Surplus (deficit) from the operating activities.

Naturally follows: Financial revenue (without any further detail on the types of revenue); Financial expenses (without any further detail on the types of expenses); Surplus (deficit) from financing activities Surplus (deficit) from the current activity (surplus / deficit from operating activities + / surplus / deficit from financing activities); In the final of Account of the patrimonial result distinguish: Extraordinary income; Extraordinary expenses; Surplus / deficit from the extraordinary activity; Patrimonial result (surplus / deficit from the current activity + / surplus / deficit from the extraordinary activity).

Cash flow statement shows existence and cash movements divided into: Cash flows from operating activities, showing cash movements resulting from the current activities: - Receipts - Payments; Cash flows from investing activities, showing cash movements resulting

³Definition is from the OMPF no. 1917/2005 for approving the Methodological norms on the organization and management of the public institutions accounting, Chart of Accounts for public institutions and instructions for its application, published in the Official Gazette of Romania, Part I, no. 1186 and 1186 bis of 29 December 2005, p. 19.

⁴The definition is taken from the same OMPF no. 1917/2005 cited above, p.20.

⁵The definition is taken from the same OMPF no. 1917/2005 cited above, p.20.

from acquisitions or sales of fixed assets: - Receipts - Payments; **Cash flows from financing activities**, which shows the movement of cash resulting from loans received and repaid, or other financial sources: - Receipts - Payments. The form is completed by each institution, with information on receipts and payments, taken from turnovers of each account from the Treasury or bank.

Very important for the financial reporting system in the public entities are **Accounting principles and policies**.

Accounting principles. The items presented in the financial statements shall be evaluated in accordance with general accounting principles, according to the accrual accounting.

Accounting principles are: 1) Principle of activity concern; 2) Principle of method consistency; 3) The principle of prudence; 4) Principle of on accrual basis accounting; 6) Principle of separate evaluation of assets and liabilities; 7) Principle of intangibility; 8) Principle of non-compensation; 9) Principle of information comparability; 10) Principle of materiality (the significance threshold); 11) Principle of predominance the economics towards justice (reality over appearance).

Accounting policies are a very important piece which reference is made in financial reports at the public entities and Romania.

Applying accounting rules established by the order to which we refer in communication, requires a set of procedures for the management of each public institution for all operations carried out, starting from the preparation of supporting documents to preparation the quarterly and annual financial statements.

These procedures should be developed by specialists in the economic and technical field knowledge of the specific activity and the strategy adopted by the institution. For developing the accounting policies must be respected the principles of on accrual basis accounting.

Accounting policies should be developed so as to ensure the provision by the financial statements of certain information that must be: a) relevant to the needs of users in making economic decisions; b) reliable in that b1) represent faithfully the patrimonial and financial position result of the institution; b2) are neutral; b3) are prudent; b4) are complete in all material respects.

Changes in the accounting policy are allowed only if required by law or have as result more relevant or reliable information relating to operations of the public institution. This must be disclosed in the explanatory notes.

The content and structure of the explanatory notes as part of financial reporting in the public entities in Romania involves a number of specific elements.

Content and structure of the explanatory notes will be developed through explanations for the preparation of the financial statements.

Explanatory notes to the financial statements contain information on the methods of assessing the assets and any additional information that is relevant to users' needs in terms of the financial position and obtained results. The explanatory notes are presented systematically. For each significant item in the balance sheet must be information in the explanatory notes.

Content and structure of the explanatory notes develops through explanations for annual financial statements prepared by the Ministry of Public Finance.

Opinions of different specialists regarding the comparative aspects between the annual financial statements foreshadowed by the IASPS (especially IASPS 1) and those adopted in Romania by the Ministry of Public Finance.

The first pertinent opinion about the application in Romania of IASPS and the factors that have competed in achieving this belongs to the specialist Pitulice Ileana Cosmina, who

worked many years in the Ministry of Public Finance and had strong connection with this problem and is a teacher at the Academy of Economic Studies in Bucharest.

From an article published on the subject⁶, resulting some very pertinent feedback belonging to or taken from other experts, linked to the problem that we treat in this communication, which we bring to your attention.

Based on grants received from the EU in the period of pre-accession, in 2002, has conducted an impact analysis, among other things, the benefits of the accrual accounting, the transition cost (IT systems, the training for accountants), the timing of transition and the need for external audit during the implementation process. From this study, there are resulted several significant findings.

By the time of the analysis made by the author, they were not conducted the independent audit missions for the financial statements prepared on the accrual basis by public institutions in Romania.

The accounting profession in Romania was not and is not involved in the development of accounting standards for the public sector, the task being the exclusive prerogative of the Ministry of Public Finance⁷.

The accounting profession in Romania is represented by the Body of Experts and Licensed Accountants of Romania (BELAR). However, the accountants employed in the public institutions are not obliged to be members of BELAR, and if an accountant is engaged in a public institution, it is declared inactive in terms of BELAR. Only the chief accountant or the financial manager of the public institution is required to have a university degree in economics.

Even if BELAR tried to organize the training sessions and to publish professional guidelines for the public sector accounting, the initiatives were not successful.

The process of hiring the accountants in the public institutions is conducted in accordance with regulations issued / or approved by the Ministry of Public Finance, BELAR non being in any way in the process.

Also BELAR was not involved in the application and monitoring the implementation of the accrual accounting. It is not wrong to believe that the Ministry of Public Finance determines its own accounting standards and apply them in a manner that, at some point, it can serve its political interests⁸.

“The successful implementation of the accrual accounting majority depends of understanding and desire to support the system showed by the external audit of the central government. (...) The external auditor must be involved in the process from the beginning. This may cause the substantial change of the organization, of the career structure and the training of auditors, at the same time with their audit approach and their mandate. (...) This may require hiring of the experts accountants in the auditor's central administration rather than on acceptance of the traditional training of the auditors”⁹.

Preparing the financial statements is the subject of the internal audit mission, not be required to performed each year. Financial statements are also checked by the Court of Accounts that carry out an external audit. The Court of Accounts has the power to discharge the administration in the public institutions management for each financial year, but audits are

⁶ Pitulice Ileana Cosmina, lecturer PhD, Academy of Economic Studies Bucharest, Adoption of accrual accounting in the public sector in Romania, Romanian Statistical Journal no. 1/2013, pp. 59-61.

⁷ Appreciation taken from Alecu G., Development and innovation on the financial reporting in the public institutions in Romania. A predictive vision of the public institutions accounting in Romania: Accounting regulations? Local accounting standards? Deregulation (IPSAS)? Lecture in the School of Advanced Accounting and the financial sustainability in the public sector, ASE, Bucharest, 2012.

⁸ This assessment is taken from Hepworth N., 2003 - Preconditions for Successful Implementation of Accrual Accounting in Central Government, Public Money & Management, 23: 1, pp. 37-44.

⁹ This assessment is taken from the same journal cited above by Hepworth N.

not necessarily to be made every year. They can be made every two or three years, although the discharge the administration is given to the management for each year.

The disadvantage brought to the process is it do not have the credibility, finally, it does not achieve its purpose. The accounting profession has achieved a critical evaluation of the process of adopting accrual accounting in the public sector.

Usually, when it was implemented the accrual accounting, the training sessions were for accounts and less for managers. This type of approach determined a poor understanding of the management on the accrual accounting and of the possibilities of using the information in the interest of efficiency and effectiveness of the public institution.

Perception „the accounting is an accountant job” is enough of widespread, because the management is not still responsible for the institution results and it is not educated to understand what are the purposes of the accrual accounting in the public sector.

„Systems of the budgetary control on the departments and the subordinate institutions must be well understood and accepted, however coupled with the desire to promote the ministerial control and the management flexibility which it requests”¹⁰.

Extremely interesting things resulted from a study entitled “Introduction of international accounting standards, the transparent solution for municipalities budgets” performed by **Medrega Claudia**¹¹ KPMG specialist, the audit financial firm, together with the Academy of Economic Studies (ASE) published in Financial Paper from which we extract some ideas of great importance to the issue that we deal with in communication.

The study was done between several villages and cities municipalities in our country and targeted the impact of IASPS in the accounting activity of these administrative entities.

Municipalities’ accountants in Romania acknowledge that the application of the international accounting standards for the public sector (IASPS) would bring a greater responsibility on the public spending and the financial performance, and improved credibility and transparency of reporting, according to this study conducted by KPMG and Academy of Economic Studies.

These standards could be applied in Romania at this level of administrative activity until the end of 2016.

Lack of transparency, efficiency and responsibility at the local public administration may represent a significant risk to the economy, and a greater transparency could be a way to avoid future insolvencies in the public sector, according to the study.

The year 2013 brought the insolvency of the Aninoasa Town Hall, Hunedoara County - the first insolvency of a territorial administrative unit in Romania, after the revolution. The Aninoasa Town Hall debt exceeded the local budget. In the private business environment there are International Financial Reporting Standards - IFRS - which gives a transparent transactions performed.

Most respondents (84%) believe that the application of the international accounting standards IASPS is likely to improve comparability and transparency of the public reporting and also will increase the responsibility of the entities on the cost management and the financial performance. Also 74% of respondents believe that IASPS application will increase the relevance and transparency of their institutions reporting.

International reporting standards for municipalities could be applied in Romania by the end of 2016. The idea of applying these standards has taken shape since 2005, with the adoption of recommendations by the European Commission, the IMF and the World Bank on the accounts of public entities.

¹⁰ This assessment is taken over all of Hepworth N. cited above.

¹¹ Medrega Claudia, KPMG, Introduction of international accounting standards, the transparent solution for municipalities budgets, published in Financial Paper on 25 June 2014.

The additional costs of staff training and the differences between national regulations and IASPS are some of the challenges of international accounting standards, raised by the municipalities' accountants.

A percentage of 95% of municipalities' accountants and financial directors who participated in the survey conducted by KPMG and AES argue that it is important and very important to consult their citizens on their actions.

Latterly, the reports of public institutions around the world have come to the public attention and at worldwide, there have been taken actions to upward the responsibility and transparency on these reports.

At EU level only 15 Member States have linked the entities accounts from the public sector with the IASPS international standards.

KPMG Romania study and Academy of Economic Studies was addressed to a number of 318 municipalities of city and town across the country. But in the study, there were only 78 responses, of which 74 usable, representing a response rate of only 23.3%. Over 60% of respondents represent the entities that have between 50 and 249 employees and annual spend between 5 and 50 million euro.

The main conclusions of the survey conducted by KPMG and ESA to municipalities in Romania are:

1) 84% of respondents believe that the application of IASPS standards is likely to improve the comparability and transparency of the public reporting and also will increase the responsibility of entities on the cost management and financial performance;

2) 66% of respondents willing to participate in the training programs on the IASPS;

3) 74% of respondents felt that the IASPS application will increase the relevance and transparency of their institutions reporting;

4) 95% of respondents consider that it is important and very important to consult citizens on their actions;

5) 50% of the staff from the municipality in Romania is well or very well trained on the IASPS.

In a very interesting and current paper of this domain, the problematic necessity of the public sector reforming¹² is approached, a context in which it can be framed the adoption process of IASPS in the public institutions in Romania; a paper from which we extracted some important ideas about the issue treated and clarified before the sentence.

The trend of globalization, accompanied by the dynamic development of the social systems, placed the National Member in a completely new position, in which the institutions and administrative systems need to be adapted.

The reform necessity in the public institutions is required by four main reasons:

1) Economic reasons: low economic growth and diminishing the budgetary resources allocated to the public administration; the private sector need to have a modern, flexible administration open to the public-private partnership;

2) Technological reasons: introduction the information technology and the communications in the public administration;

3) Sociological reasons: citizens, as beneficiaries of the public services are becoming more exigent and no longer accept that their needs to be determined exclusively by what administrations offer them;

4) Institutional reasons: integration of Romania into EU structures involves another mode of administration of the services; the strongly hierarchical structure gives way to other new organizational types based on the decentralized structures.

The objectives of the public sector reform, according to the authors mentioned, are:

¹² Consider the paper that belongs to the specialists Oncioiu Ionica, Oncioiu Florin Razvan, Chiriță Sorin, Public Accounting, Human Resources Development Institute, Bucharest, 2008, pp.23-27.

- 1) Depth restructuring of the central and local public administration;
- 2) Changing the relations between the administration and citizens;
- 3) Decentralization of the public services and strengthening of the local and financial administrative autonomy;
- 4) The gradual demilitarization of some community services;
- 5) Depoliticising the public administration structures and eliminating the political clientele;
- 6) Cessation of bureaucracy in the public administration;
- 7) Consistency in the administration; improving the administrative management;
- 8) Application of some rational policy of development and modernization of rural and urban areas;
- 9) Strengthening of the state authority and its responsibilities;
- 10) Harmonization the legal framework with EU regulations;

Public accounting reform in the public institutions requires a real and fair recognition of the expenses. Applying only formal of the accounting principles and rules does not increase the transparency. Therefore, the public accounting requires the existence of several highly specialized staff with high professional training and experience in the field. Public accounting can provide the transparency information only if the decision makers and the public are better informed about the nature of information provided and their financial implications. It is not always the real situation, even in many OECD countries wherein the budget reporting through financial means is often inadequate. For full transparency, the government should be prepared to encourage the independent audit of the financial statements and the budget implementation, so that to demonstrate, in a fair way, how public money is used.

Another very interesting paper on the issue of our communication is a thesis of PhD student Popescu Puşa Viorica¹³, who in the end of her scientific research conducted a study based on a questionnaire related to the model of the financial statements from a public institutions in Romania and the degree of compliance of these situation with those specified by IASPS. In this part of her thesis we extracted some important ideas.

The conclusions of the study conducted by the PhD student are:

- by taking the national rules to the financial statements model (balance sheet, Account of economic result, Cash flow statement, Account of budget execution for revenue and expenditure), which is based on the IASPS 1 „Presentation of Financial Statements” and IASPS 2 „Cash Flow Statement”, but also the principles underlying their preparation (concern the activity, prudence, consistency the methods etc.), it can be said that the harmonization of the public institutions accounting with the Financial Regulation applicable to the general consolidated budget of the European Community nr.1605 / 2002 and the European Commission Regulation on the detailed rules for implementation of the Financial Regulation no. 2342/2002, the chapter on „Presentation the accounts and accounting”;

- In the public sector, IASPS 1 “Presentation of Financial Statements” includes the following requirement: „Financial statements should not be declared as compliant with IASPS unless they comply with all the requirements of each of IASPS”.

The European Commission has approved a specific directive on the accounts of the public institutions accounting, as it is the case of the private sector, according to EC Regulation nr.1.606 / 2002 on the application of IAS, the Commission decide on the applicability within the Community of the International Accounting Standards (IAS) for the private entities.

In these circumstances, we can rather talk about a convergence of the national rules with IASPS only compliance, which is defined as the process by which it is appreciated the

¹³ Puşa Viorica Popescu, Accounting and control of formation and use the budgetary resources, PhD Thesis, Babes-Bolyai University, Cluj Napoca, 2011, pp. 12-15.

consistency in the content of the disclosure rules and preparation of the financial statements, representing a harmonization of the national rules with the rules set by the regional bodies and internationally for accounting normalization, while convergence constitute the taking over nationally the IASPS spirit and the conceptual framework, namely the adoption of some accounting treatments provided in the international standards.

The conclusion of the comparative study presented is that the quality of information provided by the financial statements can and must be continuously improved to provide relevant information, credible and also to ensure the comparability between reporting periods and between the public entities in the same country or different countries and the comparability of the national accounts among states.

This desideratum can be achieved by further increasing of the convergence degree with IASPS by:

- Adapting the format of the balance sheet and the account of the economic result in accordance with the standard;
- Preparation the cash flow by using two methods: direct and indirect method, set by the standard;
- Additional disclosures in the notes to the financial statements relating to: changes in the original budget, errors of the prior periods, the date when the financial statements were authorized for issue / deposit etc. .;
- Improving the national rules relating to: subsequent events that lead to adjusting the financial statements; events that not lead to adjusting the financial statements; conduct the reviews for the entire class to which it belongs the revalued asset; presenting the methods for calculating the asset impairment; introduction the assets and contingent liabilities etc.

Despite the fact that the level of assurance provided by external public audit on the accurate image quality provided by the financial statements is not absolute, however the audit contribution to the restoring the public confidence in the quality of the financial reporting system has a special significance.

Starting from these premises, PhD candidate has proposed conducting a research dedicated to analysing how public external auditors perceive and use the concept of accurate image in achieving their business and the sample approached was determined by population of the external public auditors of the Romanian Court of Accounts.

The most important conclusions of this empirical study are:

- In the vision of 82.35% of the public external auditors the role of financial auditor is to provide reasonable assurance by expressing an opinion on the extent to which the financial statements reflect an accurate image. Another part of the auditors (11.77%) believe that the role of the financial auditor is of independent verification of the accounting information according to a set of established criteria, which are supposed to reflect the wishes and needs of users;
- Analysis of responses concerning the factors that influence the independence of external public auditors, 88.23% of respondents declare that the factor with the greatest influence is considered to be financial, personal or otherwise with the auditee entity or others within it. On the other hand we notice other factors with significant impact on the independence of the public external auditors: material indebtedness or otherwise, towards the employees of the audited entity (82.35%) as well as the family relations or affine to the fourth degree, included the audited entity (64.70%). There are noted the opinions that the independence of the public external auditor may be influenced by political pressures or from the interest groups, internal or external to the entity as well as by the involvement of auditors in developing and implementing the management and control systems of the audited entity;
- Among the factors that affect the efficiency of the financial audit work is remarkable for insufficient time resources allocated to the audit mission, according to 64.70% of

respondents. Also a very large extent, the auditing work is affected by the impossibility of investigation the financial infringements by the lack of legislative competence. It is not to overlook the fact that 29.42% of respondents consider a factor with great influence the unorganized internal control activity that is not made;

- Each component of the set of the financial statements is assessed as having some significance in reflecting the full picture of the reality image provided by the financial statements. The highest percentage (94.12%) was granted by respondents of the budgetary execution accounts. We believe that this ratio is justified because the public external auditors certify the accuracy and veracity of the execution accounts data that are checked;

- The most important factors in the respondents' opinion regarding the veracity assessment of audit evidence as proof of the relevance of audit (64.7%) and the independence of the source of the origin (47.05%). Important in the assessment of the audit evidence are considered their objectivity (52.92%) and the form of the sample (47.05%).

On the whole of these results, we find that respondents give greater importance to the quality characteristics of the audit evidence than the quantitative ones. Sufficiency in terms of quantity is estimated to be only somewhat important from the perspective of 58.83% of the respondents;

- As regards the expression of audit opinion that refers at the faithful image provided by the financial statements, it is noticed a matter of concern, so, 88.24% of respondents have always expressed an adverse opinion, never an unqualified opinion;

- In the view of the most public external auditors, the faithful image represents a principle that must be respected by the financial statements;

- The most public entities are not aware of the legal regulations on the accounting policies and those that are aware of these regulations have not developed accounting policies to ensure an accurate image of the results and financial position;

- Opinions on the necessity of extending the fair value measurement of all balance sheet items are divided almost equally between supporters and opponents.

Another interesting research was done by a team of specialists consisting of PhD professor Ristea Mihai, Jianu Iulia and Jianu Ionel¹⁴ and targeted our country's experience on the application of International Financial Reporting Standards (IFRS) and IASPS, from which we extracted some ideas on the IASPS.

In many countries, the parliamentarians and taxpayers accuse the public institutions a mediocre keeping of their accounts, a lack of transparency and inefficient communication. Peculiarities of the public sector avoided a long time the necessity of the public institutions, especially the state, to provide transparent, relevant and reliable, certificates of external auditors.

To address this need, there must be a quality accounting referential, based on international accounting standards to integrate the public sector specificities, thus ensuring the data comparability, transparency of the financial information, a veritable responsibility and good governance. Therefore, the need for information even more acute in the public system and the need to provide comparable information and transparency have led to the development and popularization of IASPS standards, high quality standards with beneficial consequences for the entire global economy.

Board of IASPS has set for the public sector since 1996, the international accounting standards inspired by IFRS, while developing an original doctrine on all the specific issues of the public sector. The objectives of the IASPS Board are to develop standards of financial reporting for high quality for their use by public institutions around the world and are based

¹⁴ Ristea Mihai, Jianu Iulia, Jianu Ionel, „Romania's experience in application of the International Financial Reporting Standards and International Accounting Standards for Public Sector”, published in *Transylvanian Journal of Administrative Sciences* 1 (25) / 2010, pp. 169-192.

on the accrual accounting¹⁵. However, because the public accounting in the most countries is based on cash accounting¹⁶, the Board of IASPS has developed a standard based on this type of accounting to make it easier transition to the accrual accounting.

IASPS standards establish the criteria for recognition, measurement, description and presentation of information on transactions and events in the financial statements with general purpose. IASPS standards are to be applied to all public sector entities¹⁷ such as national governments, regional governments, municipalities and government entities, but excluding the state economic entities that must apply the International Financial Reporting Standards (IFRS).

Ad litteram application of IFRS in the public sector is not possible because they do not cover all transactions realised by the public institutions. There are own areas of the public institutions, like unrequited transactions (taxes, subsidies, transfers), obligations and social benefits, reconciliations between financial accounting, budget, national accounts and accounting evaluations of assets, concessions of public sector etc.

IASPS will lead to a significant improvement in the quality of the financial statements published by public institutions and, consequently, for a better assessment of the decision affecting the state resources, which will increase the transparency and the accountability.

IASPS are reliable accounting standards established by the independent manner through a very rigorous procedure and supported by governments, professional accounting organizations and international organizations. Currently, for the public sector were adopted 21 standards IASPS inspired from the IFRS standards (IASPS 1 - IASPS 21), there were created own standards for the particular area of the public sector (IASPS 22, 23, 24) and also it was created a standard after the cash accounting method with the purpose of introducing the accrual accounting.

In addition, 11 standards IASPS (IASPS 1, 3, 4, 6, 7, 8, 12, 13, 14, 16, 17) were revised in 2007 in order to consider the changes that have occurred in IFRS during 1996-2006.

The main differences between the first 21 IASPS standards and IFRS of which were inspired are: 1) additional comments of IASPS standards to IFRS to clarify the applicability of accounting standards in the public institutions; 2) different definitions of the used terms in the IASPS standards to IFRS; 3) the used terminology in certain cases of IASPS than in IFRS.

Among the most significant changes required by standards IASPS can remember: 1) applying the principle of patrimony which involves recording assets at active and their damping each year; 2) applying the principle of prudence which require the

¹⁵ When the accrual accounting based the preparation of the financial statements, these will include the statement of the financial position, statement of the financial performance, cash flow statement and statement of changes in the net position;

¹⁶ When the cash accounting is based for preparation the financial statements, the primary financial statement is represented by the statement of revenue and payments in cash;

¹⁷ The term „public sector entity” used in the IPSAS standards could cause confusion with the term „public entity” used within the regulations of Romania. Law no. 84/2003 for amending and supplementing the Government Ordinance no. 119/1999 regarding the internal public audit and the preventive financial control, the public entity is defined as a „public authority, public institution, company / national company, autonomous administration, company in which the state or an territorial administrative unit is the majority shareholder with legal personality, using / managing public funds and / or public property. Therefore the public entities, as they are defined by Law no. 84/2003 shall not apply the IPSAS standards but only IFRS (where this it would be allowed). The term „public sector entity” used in the IPSAS standards is equivalent in Romania with the term „public institutions” as defined by the same regulation as „Parliament, the Presidential Administration, ministries, other specialized bodies of the public administration, other public authorities, autonomous public institutions and their subordinated institutions, regardless of their method of financing”. Therefore, in order not to create confusion in the article we use the notion of public institutions, for those entities to which the IPSAS standards are addressed.

recognition of provisions even those for pensions; 3) presenting the financial statement, in number of five: statement of the financial position / balance sheet, statement of the financial performance / profit and loss account, cash flow statement, statement of changes in the net assets/equity, annexes to the financial statements; 4) switching from the cash accounting to the accrual accounting.

In the context of Romania's accession to the European Union to fulfil the engagements, convergence and implementation of the *acquis communautaire*, the Romanian accounting standard setters have initiated measures aimed at supplementing the cash accounting with the accrual accounting. Analysing the public accounting reform in Romania, the national legal framework was enriched over time through gradual assimilation of the specific elements of the accrual accounting, due to the issuance of the following regulations:

- Order no. 1.394 / 1995 on classification the indicators of the public finance;
- Accounting Law no. 82/1999;
- Law no. 500/2002 on the public finance;
- Government Emergency Ordinance no. 45/2003 on the local public finances;
- Order no. 1917/2005¹⁸ approving the Methodological Norms on the organization and management of public institutions, Chart of Accounts for the public institutions and instructions for its application, applicable from 1 January 2006.

In 2004, the Order no. 1.461 / 2004 on the Methodological Norms on organizing and conducting the accounting of the patrimony of public institutions, Chart of Accounts for public institutions and instructions for its application which tried to do the harmonization of the public accounting with IASPS standards and the European accounting directives, the order has been applied experimentally since 1 January 2005 for one year by a number of public institutions¹⁹.

Based on the conclusions drawn as a result of the experiment of this order and the proposals made by other public entities, there were made changes and additions, the Order no. 1.461 / 2004 was then replaced by Order no. 1917/2005, applicable from 1 January 2006 by all public institutions in Romania.

By the Order no. 1917/2005 was tried as for the economic agents, the harmonization of public accounting in Romania with IASPS standards, on the one hand, and the compliance with the public accounting to the European accounting directives, on the other hand. Convergence base of the public accounting in Romania with the IASPS standards is represented by the financial statements, they making the interface between internal and external users, national and international.

In Romania, by Order no. 1917/2005 the public institutions must prepare financial statements that give a true image of the assets, liabilities, net assets and the financial performance and the patrimonial result, requirement imposed by the European Accounting Directives. In addition, the set of the financial statements that must be drawn up by the public institutions in Romania are very close to many of IASPS requirements.

Thus, the quarterly and annual financial statements prepared by the public institutions include: balance sheet, account of the patrimonial result, cash flow statement, and statement

¹⁸ Order no. 1917/2005 was amended and supplemented by Order no. 556/2006, by Order no. 1.649 / 2006, by Order no. 1.187 / 2008, by Order no. 3.471 / 2008 and by Order no. 529/2009;

¹⁹ Public institutions have applied the experimental the Order no. 1461/2004: General Directorates of Public Finance in Alba, Giurgiu, Hunedoara and Vrancea; of the Ministry of Public Finance - National Agency for Fiscal Administration; 7 military units of the Ministry of National Defence; Ministry of Administration and Interior; Romanian Intelligence Service; National Administration of State Reserves for its own activity and for the Territorial Unit no. 350; Public Ministry - Prosecution Office attached to the High Court of Cassation and Justice for its own activity and for the Prosecution Office attached to the Court of Appeal Galati and Bucharest Tribunal; Dambovitza County Pension, Hunedoara and Vaslui; National Prison Administration of the Ministry of Justice; Galati City Hall; Pitesti City Hall; Zalau City Hall;

of changes in the structure of net assets, the annexes to the financial statements that include accounting policies and explanatory notes, accounts of budget execution (Order no. 1917/2005).

But Order no. 616/2006 for approving the Methodological Norms for the financial statements by public institutions on 31 December 2006 makes changes on the composition of the financial statements of the public institutions. Thus, the complete set of the financial statements for the financial year 2006 include: balance sheet, account of the patrimonial result, cash flows statement, accounts for budgetary execution and the annexes (Order no. 616/2006). But by Order no. 3.769 / 2008 for approving the Methodological Norms on the preparation and submission the financial statements of the public institutions at 31 December 2008 are returned to the original composition of the financial statements fixed by Order no. 1917/2005.

According to existing regulations in the public finance and accounting field, more recent²⁰, the public accounting in Romania includes:

- Revenue and expenditure accounts which involve collection of revenue and expenditure related to the budgetary of a year²¹;
- General accounts based on the principle of establishing the rights and obligations which reflect evolution of the financial and patrimonial situation as well as the patrimonial surplus or deficit²²;
- Accounting the State Treasury;
- Accountancy meant for analysing the costs of the approved programs.

Public Accounting Reform in Romania had the following macroeconomic consequences: 1) increasing the responsibility of the authorizing officers; 2) increasing the accountability of the public officials; 3) analytical organization of the public accounting; 4) better management of the public funds, 5) harmonize the systems of Romania to the European Union; 6) the transparency of the public information, while increasing the confidence in the status of the public functionary²³; 7) adoption of the new principles in the public accounting, as well as the principle of prudence which involves forecasting the probable losses, the principle of the independence of exercises, mandatory to be applied in an accrual accounting.

Changes in the public accounting in Romania in order to achieve the objective of harmonizing the IASPS standards complies with Accounting European Directives have been profound. But if a change would be imposed compliance with the ISPAS standards the financial resources, that would have been involved, had had a significant size.

Effective application of IASPS standards also requires significant investment in the staff training, for making the relevant regulations and solving the accounting problem. The IASPS standards are complex, especially for a person who does not have an accounting training. In addition, equipping of the public institutions with the integrated IT systems is absolutely necessary to achieve the total compliance in applying the IASPS.

²⁰ We consider two recent regulations: OMPF no. 2373/2016 for amending and supplementing the Methodological norms on the organization and management of the public institutions accounting, Chart of Accounts for public institutions and instructions for its application, approved by Ministry of Public Finance no. 1917/2005, published in the Official Gazette of Romania, Part I, no. 796 of 10 October 2016 and OMPF no. 191 of 30 January 2017 for approving the Methodological Norms regarding the preparation and submission of the financial statements of public institutions on 31 December 2016 published in the Official Gazette of Romania, Part I, no. 103 6 February 2017.

²¹Cash accounting

²²Accrual accounting

²³ Ionescu, L., "International accounting standards for the public sector and reform of the public accounting in Romania", Congress XVI of the accounting profession in Romania, Bucharest CECCAR Publishing House, 2006, pp. 560-569.

Once implemented the IASPS standards, they will be audited, which will require additional financial expenditure. Certification the accounts according as the IASPS standards cannot be achieved in the conditions of full application of the standards.

In many countries, although they have applied the standards IASPS, have not been certified the accounts after the external audit, as not complying with all the requirements of IASPS standards mainly due to limitations of the internal control and the information system. IASPS standards are complex and difficult to interpret even if they include and the comments²⁴, with an economic and financial character that not correspond directly to the legal terminology of each country.

In addition, the governments should produce the own standards because the IASPS standards do not treat all the specific transactions occurring in the public sector. Every public institution: state, hospital, public international organization or local authority has an adapted system to their personal characteristics, while the IASPS standards are uniform, not being flexible depending on the particularities of each public institution.

Adoption of the IASPS standards presents the following advantages: 1) a significant increasing of the quality of the financial reporting by the public institutions; 2) increasing the credibility and transparency of the information presented; 3) a better internal control and greater transparency of assets and liabilities, 4) detailed information on the useful costs in facilitating the management oriented on the results; 5) more complete information that facilitates administration and the resource management, providing the effective benefits and obtain the results; 6) assessing the responsibility to all resources that the public institution manage them; 7) making the decisions about providing the resources or the development the new activities; 8) assessing the financial statement, performance and cash flows of the public institutions; 9) greater consistency and better comparability of the financial statements because each standard requires the uniform, detailed and specific disclosure.

CONCLUSIONS and PROPOSALS

Currently, the accounting community is animated by a strong desire of normalization and alignment of the accounting practices internationally in order to increase the comparability of the information disseminated by the financial statements. Current concerns of accounting area are circumscribed to desire for achieving a generally accepted accounting language, which reflects the application of some uniform accounting principles and treatments, as a foundation for preparing the financial statements.

It is a complicated approach, with a trajectory dictated sometimes by the certain influences, and especially, with the extraordinary dynamics. Professional accountant today has a difficult task of updates and keep up with the frequent changes in the accounting regulations, decided, mostly internationally. Thus, in Romania, in 1999 and so far, the transformations and changes of the accounting area followed (and is still) a route that aimed, first, the harmonization with the European Accounting Directives and the International Accounting Standards (in the past) compliance with the European Directives (now) and probably, the compliance with International Financial Reporting Standards and International Accounting Standards for the Public Sector (in the future).

As in the case of the economic agents, probably in the future, the public accounting in Romania will support further changes in order to be close in a large extent by the IASPS standards. The experience of the developed countries applying IASPS standards as well as the generalization of the global thereof, makes us to say, that probably will not be long until in

²⁴ IPSAS standards issued until nowadays exceed 900 pages.

Romania, the public accounting will not only be harmonized with the IASPS standards but consistent with these.

More and more close to the public accounting in Romania by the private entities accounting, we consider that allowed the indirect introduction of the IASPS standards in the public accounting in our country.

Romania will have everything to gain by implementing the IASPS standards, this is because Romania will equip it with: 1) a referential accountant of quality, without which there is no good competitiveness and a clear framework; 2) an internal control system within each organizational structure, system of standards imposed by the ISPAS standards and it will also have to be audited, which will allow the correction of possible malfunctions; 3) a transparent system of comparative information, like the entities from the private sector; 4) certified accounting to ensure a true image of the financial position, the financial performance and cash flows of the public institutions, such as any accounting complies with the IASPS standards to be audited; 5) improving the financial communication to serve not only as a tool for presenting of a true image in the accounts and as a tool for piloting for the efficient management of the funds and in providing the relevant information for decision making.

On the qualitative research made by us in this communication, we can formulate some **proposals, we hope, feasible:**

1) Continue to the process of harmonize the public accounting as a whole and the financial statements public in Romania with the IASPS, with the support of two professional profile bodies (CAFR and CECCAR), in addition to the initiation of national standards in the field, derived from IASPS, to customize the certain situations and the test cases to their organization and activities of the public institutions at all levels in Romania, as there are practices in other organizations and professions in our country (we refer as example title to the Body of Experts and Licensed Accountants of Romania - BELAR);

2) Conducting a comprehensive process, well-coordinated of the staff selection in the accounting field from the public institutions at all levels in Romania, with priority among the professional accountants members of BELAR (holding the quality of experts accountants and licensed accountant) but only in parallel to conduct systematic program of training of personnel that work in the establishments of accounting of all public institutions (which in the key moments to be included and authorizing officers from the 3 levels set out in the law of public finance) on the issues related to the content and applicability of IASPS standards, customized to the requirements of the public institutions activity in our country;

3) As soon as the harmonization process of the public accounting in Romania with IASPS reaches an advanced stage at the country level in all territorial administrative structures, it can be proceed compulsory the auditing of the annual financial statements of the medium and large public institutions (on the basis of the value on assets, equity and the total revenues established by the Ministry of Public Finance for these public entities) activity to be carried out both by the Court of Account and the Chamber of Financial Auditors of Romania;

4) Rethinking the whole system of internal control / management and the internal audit, carried out in the public institutions in Romania, in order to amend the standards and procedures in these areas, leading to increased quality and effectiveness of their activity for the Ministry of Public Finance and the bodies that centralizes and processes the information in the financial statements of the public entities to rely much more on the fact that they provide an accurate image of the reality of their financial position and performance;

5) It is necessary to require further scientific research by the universities of economics, institutes and professional bodies in the field, for the establishment and strengthening the local and central public entities, of the annual financial statements in accordance with IASPS, because this is a theme extremely important and useful and still remain a number of shortcomings, such as: a) lack of homogeneity of accounting data from local and municipal

companies; b) continuing still insufficient knowledge about simple and consolidated financial statements; c) shortage of trained staff thoroughly in this regard; d) the lack of mandatory the annual audit of the annual financial statements of the public institutions (this audit is made of 2-3 years, when the Court of Accounts carry out controls on the public institutions).

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THE EVOLUTION OF THE UNCONVENTIONAL WARFARE CONCEPT

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Abstract: *Unconventional warfare (UW) represents the most complex mission performed by Special Operations Forces (SOF). It is often done deep in the enemy territory, in a clandestine/covert manner, and with little or no support from regular supply channels. Also, UW is conducted over a long period of time to achieve strategic political and military objectives. Moreover, UW is a great option to protect national interests with very little forces and a low signature. Therefore, this short study attempts to identify how the UW concept developed and changed throughout recent history. In order to accomplish that, this paper will look mainly at the US SOF Doctrine post-WWII and highlight the main ideas surrounding UW evolution.*

Keywords: *Unconventional Warfare, Special Operations Forces, guerrilla operations.*

Introduction

The terms of *unconventional warfare*, *unconventional operations* and *unconventional military actions* are addressed in detail in unclassified, open-source literature. This study focuses on detailing these concepts and describing them through historical examples, especially from the Second World War and the Vietnam conflict. Addressing these concepts is not a contemporary scientific approach but was done since the dawn of studying military science and art. Carl von Clausewitz,¹ Jomini,² Lawrence and Hart Lindell³ looked at unconventional warfare, defining and explaining the concept as one of the main attributes of partisan organizations. On the other hand, Mao, Che Guevara and David Kilcullen believe that actions related to unconventional warfare are carried out solely by revolutionary movements or insurgency. Going forward, S.D. Maxwell, J. Osborne and D. Kilcullen⁴ address the current issue of terrorism, conceptualizing it as a global insurgency, which uses goals, tactics, techniques and procedures typical to those of unconventional warfare⁵. Regardless of how unconventional warfare is presented, we can highlight three distinct features specific to this type of manifestation of the phenomenon of war, namely:

- the active involvement of the civilian population either as partisan organizations or insurgent movements;
- the use of tactics, techniques and procedures specific to this type of warfare (sabotage, subversion, small-scale raids, harassment of enemy forces, full exploitation of psychological effects, creating chaos etc.);

¹ Carl von Clausewitz, *On War*, 1832 - 1835.

² Antoine Henri Jomini, *Precis del'art de la guerre*, 1834.

³ Lindell Hart, *The strategy of indirect approach*, 1941, republished in 1942 with the title: *The way to win wars*.

⁴ David Kilcullen, *Countering Global Insurgency*, Small Wars Journal, 2004.

⁵ *Ibidem*.

- the existence of an external support organization (usually a sponsor belonging to either the host nation or a different nation and it can be represented by the armed forces or the intelligence services).

These features make the unconventional warfare phenomenon unique, and require a specific approach in order to understand the dynamics and mechanisms that influence its beginning, course and outcome.

From the above information we can easily see that most bibliographic sources are mainly from the academic and military domains from the West and specifically the United States where the unconventional warfare issue is dealt with extensively in scientific papers. Although less studied, unconventional warfare is also reflected in the studies of Romanian authors. We note the interest shown by Valerică Cruceru who comprehensively addresses issues of guerrilla movements conducting unconventional warfare⁶ as well as the correlation between insurgency and limited war⁷. Furthermore, Vasile Soare briefly presents the evolution of the war phenomenon, from the war in ancient times to the modern day unconventional warfare presenting historical examples showing the use of special operations forces in the full spectrum of missions assigned to these types of structures.⁸

In the current operational context, the issue of unconventional warfare is found in scientific studies of both foreign and Romanian authors. The approach of this issue focuses mainly on identifying the characteristics of unconventional warfare and the presentation of the specific timeline of events occurring throughout an unconventional war. Also, a number of foreign authors, such as: S. Hy Rothstein,⁹ Susan L. Marquis¹⁰ and John Arquilla¹¹ were committed to studying and understanding the use of US Special Operations Forces in unconventional military operations. Given this context, our scientific approach aims to capitalize on the results of the scientific research of the mentioned authors and, combined with the personal experience in such structures, we aim to identify the best ways and the most appropriate conditions for the use of special operations forces in unconventional military actions / operations and to highlight the crucial role of SOF in carrying out this type military action.

The evolution of the concept of unconventional warfare

The definition of *unconventional warfare* has evolved over time, but this trend has brought no significant changes in the understanding of the actual term. As mentioned in the introduction, this concept has been discussed since the very beginning of studying military science. Theorists such as Sun-Tzu, Clausewitz and Jomini mentioned unconventional military actions in their works, each treating the subject in the context of their respective historical period. Furthermore, throughout the history of warfare, the belligerents have conducted operations specific to unconventional warfare. However, doctrinal record of this type of military action appears only after the Second World War, the determining factor for this being the experience of Great Britain, Russia and the United States in this conflict.

In terms of semantics, the term *unconventional warfare* is the opposite of *conventional warfare* in the sense that the dictionary-provided definitions of the former show the following

⁶ Valerică Cruceru, *Theory and Practice in Modern Guerilla Warfare*, Bucharest, 2013.

⁷ Valerică Cruceru, *Insurgență, contrainsurgență și război limitat. Aspecte ale artei militare în războiul din Vietnam*, Bucharest, 2005.

⁸ Vasile Soare, *Forțele Speciale – Comandouri aeropurtate în acțiune*, Bucharest, 2002.

⁹ Hy S. Rothstein, *Afghanistan&The Troubled Future of Unconventional Warfare*, Annapolis, Maryland, USA, 2006.

¹⁰ Susan L. Marquis, *Unconventional Warfare*, Washington D.C., USA, 1997.

¹¹ John Arquilla, *Insurgents, Raiders, and Bandits: How Masters of Irregular Warfare Have Shaped Our World*, Lanham, Maryland, USA, 2011.

characteristics: *not conventional, which is not subject to conventions, norms.*¹² Also, the objective in the two types of war differs in that while during a classical confrontation the emphasis is on neutralizing / destroying the opponents' military power, while in unconventional warfare the emphasis is on defeating the opponent without a direct military confrontation, but through external support for one of the warring parties. Typically, the unconventional forces act undercover or discrete, their targets are not exclusively of military nature, and the techniques, tactics and procedures employed are distinct from those specific to purely military operations.

*Members of an OSS team preparing for a mission*¹³



Studying these concepts is not an easy endeavour because there are few unclassified relevant bibliographic sources. In this context, most of the unclassified bibliography comes from the US; therefore we will particularly analyze how this term has evolved in the realm of USSF. This is due to the fact that the USSF were initially created in order to carry out unconventional military actions / operations, currently this being the defining characteristic of their structure.

Thus, under the current military doctrine of the US military, unconventional actions / operations are defined as "*military operations conducted along with, or through irregular forces in support of resistance movements or conventional operations.*"¹⁴

The concept of unconventional military actions / operations appears in US military doctrine starting with the creation of the Office of Strategic Services (OSS), during the Second World War. This office was created to coordinate support for the resistance movements of the civilian population. Therefore, military forces and undercover agents coordinated by OSS acted in support of the partisans throughout Europe, especially in Belgium, France, the Netherlands and Poland, who fought against the German occupying forces. In the same time, OSS agents have acted in support of the resistance movement in the Philippines who fought against the Japanese occupying forces. Actions carried out and coordinated by OSS agents during the Second World War led to the definition of unconventional operations, in the context of guerrilla warfare, as military actions executed undercover in enemy-occupied territory, or where the enemy exercises influence. Probably the most famous unconventional actions / operations carried out during the Second World War

¹² Definition of *neconventional* (Ro.), available online at <https://dexonline.ro/definitie/neconven%C8%9Bional>, accessed on 21 February 2017.

¹³ Image from <http://rossbossoldparatrooper.blogspot.ro/2013/06/oss-jedburghs-original-oda-guys.html>, accessed on 23 February 2017.

¹⁴ F.M. 3-05-130, *Army Special Operations Forces Unconventional Warfare*, USA, 2008, Appendix J, p. 219.

are those executed by the Jedburgh¹⁵ teams in the territories occupied by German forces. The name of these teams comes from the Jedburgh region in Scotland, a place where Scottish guerrilla formations existed during the twelfth century. Also, the establishment of these teams represented the first time that the UK, through the Special Operations Executive (SOE) and the US, through the OSS, cooperated in the domain of special operations. These teams consisted of three soldiers, including an officer (British or American), a native from the area of operations and a radio operator.

After a few weeks of training in specific activities held in the UK, teams were infiltrated by parachute in German-occupied territories, with the mission to support the resistance movements in these areas and to coordinate the operations executed by members of the resistance. Since the Jedburgh teams were supporting legitimate resistance movements, who openly fought against the German occupation forces, Jedburgh members were equipped with uniforms and military equipment. Although the strategic impact of Jedburgh teams has not been fully immediately acknowledged at the conclusion of the Second World War, the actions performed by them in the occupied territories led to the establishment of modern special operations forces.

After the Second World War, the definition of unconventional military actions / operations focused on the specifics of guerrilla warfare, and on the covert actions conducted in territories occupied by a foreign military force. The experience of working with partisan movements in Europe has broadened the definition to include actions executed by partisans. Therefore, in 1950, The Dictionary of United States Army Terms, defined actions executed by partisans as "actions against an enemy force carried out by people devoted to a cause, but were not part of the armed forces of a country. These actions include: actions specific to guerrilla warfare, passive resistance of clandestine groups, espionage, sabotage and propaganda."¹⁶

In 1951, the US Army established The Psychological Operations Bureau that included units tasked with the execution of unconventional military actions / operations. Furthermore, the first two books detailing the execution of Special Operations were published, namely: F.M. 31-21, *Organization and Conduct of Guerrilla Warfare* and F.M. 31-20, *Operations against Guerrilla Forces*. Thus, according to F.M. 31-21 actions specific to guerrilla warfare were defined as "operations carried on by small independent forces, generally in the rear of the enemy, with the objective of harassing, delaying, and disrupting military operations of the enemy. The term is sometimes limited to the military operations and tactics of small forces whose objective is to inflict casualties and damage upon the enemy rather than to seize or defend terrain; these operations are characterized by the extensive use of surprise and the emphasis on avoidance of casualties. The term as used in this manual also includes organized and directed passive resistance, espionage, assassination, sabotage, and propaganda, and, in some cases, ordinary combat. Guerilla warfare ordinarily is carried on by irregular, or partisan, forces; however, regular military forces which have been cut off behind enemy lines or which have infiltrated into enemy rear areas may use guerrilla tactics."¹⁷ Also, the same book indicated that actions specific to guerrilla warfare can influence political decisions and economic aspects of the country and their overall aim is to reduce the enemy's fighting ability by delaying and preventing its actions, thus weakening its morale and will to fight.

¹⁵ Jedburgh teams were mixed teams from the OSS, US, the Special Operations Executive (SOE), UK and the French intelligence service who conducted clandestine operations in German occupied territories. These teams were parachuted covertly over Belgium, France and Holland with the objective to support the resistance movements and also to coordinate and execute subversion and sabotage missions. Information from <http://www.soc.mil/OSS/jedburghs.html>, accessed on 23 February 2017.

¹⁶ Dictionary of United States Army Terms, Special Regulation 350-5-1, USA, 1950, p. 15.

¹⁷ F.M. 31-21, *Organization and Conduct of Guerilla Warfare*, USA, 1951, p. 22.

Once Special Forces were officially established, the earlier mentioned books were superseded, making room for new regulations and manuals specific to this type of forces that tackled the issue of unconventional military actions / operations from an SF perspective. Thus, in 1955 F.M. 31-20, *Special Forces Group* is published and supersedes the 1951 edition. This manual stated that the unconventional military actions / operations include actions specific to guerrilla warfare but also the escape from enemy occupied territories and the subversion actions carried out against a hostile force.

In 1958 a new version is published called F.M. 31-21, *Guerrilla Warfare and Special Operations Forces*, which defines guerrilla warfare specific actions as "that part of unconventional warfare which is conducted by relatively small groups employing offensive tactics to reduce enemy combat effectiveness, industrial capacity, and morale. Guerrilla operations are normally conducted in enemy-controlled territory by units organized on a military basis."¹⁸ The manual also points out that unconventional military actions / operations include, in addition to actions specific to guerrilla warfare, evasion and escape from enemy-occupied territories and subversive actions against hostile forces.

Going forward, in 1961 F.M. 31-15, *Operations against Irregular Forces* is published, which specifies that the term *irregular* refers to all unconventional forces and operations. This includes actions taken by partisans, insurgents, terrorists and members of guerrilla movements, subversion and other activities organized, coordinated and executed on the same principles as those mentioned above. Also according to the same manual, irregular actions include all military, political, psychological and economic actions carried out by the inhabitants of a country in order to weaken the authority of the local government or a foreign occupation force, using irregular methods and techniques.

The 1960s brought new amendments to specific regulations of the US military, but the definition of unconventional military actions / operations was not substantially changed. The only change to the definition of support to resistance movements was the inclusion of an "external sponsor", represented by SF units of a different country.

In 1969 F.M. 31-21, *Special Forces Operations* is published, detailing the concept of unconventional military actions / operations. Thus, according to this manual, unconventional military actions / operations consist of actions specific to guerrilla warfare, escape from the enemy-occupied territories, and subversion executed by the local population against hostile forces, supported by an external force. Unconventional actions are the military, political, psychological and economic actions executed overtly or clandestinely in areas that are under occupation or influence of foreign forces whose interests are conflicting with those of the US. These actions can be executed unilaterally by the USSF or in cooperation with the local population and will avoid formal direct military confrontation.¹⁹

Unconventional military actions / operations are executed in order to exploit the enemy's military, political, psychological and economic vulnerabilities through support and guidance offered to the resistance movements or unilaterally by USSF. These actions can be covert, clandestine or overt. Undercover operations are executed so as not to disclose the identity of the external sponsor. In the case of clandestine operations, the focus is on hiding both the operations and the sponsor. In a developed theatre of war, in which conventional forces are fully engaged in armed conflict, SF will execute unconventional military actions / operations in support of the conventional campaign.

In 1974, the F.M. 31-21, *Special Forces Operations* manual develops the definition of unconventional actions as "unconventional style military actions consist of a broad spectrum of military and paramilitary actions carried out in the occupied territories or territories influenced by the enemy or in politically sensitive areas. These include actions specific to

¹⁸ F.M. 31-21, *Guerrilla Warfare and Special Forces Operations*, USA 1958.

¹⁹ F.M. 31-21, *Special Forces Operations*, USA, 1969, p. 14.

guerrilla warfare, evasion and escape from enemy occupied territories, subversion, sabotage, direct action and other discreet, covert or clandestine actions. These actions can be executed by the parties / groups of the local populace, supported by an external sponsor, in times of peace, crisis and war."²⁰ In the same year, F.M. 31-21, *Special Operations Forces* further expands the definition above, stating that unconventional style military actions can be executed against external sponsors or insurgent movements in a particular country, but also against a country that allows access to insurgents on its territory in order to establish insurgent bases, training centres and sanctuaries. These changes aim to support the host nation's pursuit in conducting a counterinsurgency campaign.

The 1990 USSF doctrine slightly broadens the definition of unconventional military actions, introducing details regarding the duration of the campaign, but also the concept of "surrogate forces."²¹ Therefore, according to the doctrine, unconventional military actions take place over a long period of time, through indigenous or surrogate forces and consist of the same type of actions that were included in previous definitions of this concept. The doctrines that were developed later resumed this definition, the differences between them consisting in slightly different nuances of certain aspects. Thus, The Joint Special Operations Doctrine introduces the concept in the unconventional assisted recovery²² as part of the unconventional military actions. Also, the doctrine states that the unconventional military actions represent the military and paramilitary aspects of resistance movements. Consequently, because of their implications the unconventional military actions are considered to be both military and political actions.

CONCLUSIONS

From the above information, we note that although each newly developed manual addressed the topic of unconventional military actions, essentially their definition has not significantly changed in over 50 years. Thus, they remain "operations conducted behind enemy lines, mainly by indigenous people assisted and guided by allied forces, in order to fulfil political and military objectives. They consist of guerrilla warfare specific actions, evasion and escape from the enemy-occupied territories and subversion against hostile states."²³

Throughout history, unconventional-type military actions were executed either during the staging phases of a conventional campaign or unilaterally, the latter being executed usually undercover. A classic example of a campaign where unconventional operations were conducted in support of actions carried out by conventional forces is Operation Allied Support (in support of resistance movements in Western Europe, the Balkans and the Far East during the Second World War). More recent examples are the campaigns carried out by the USSF alongside popular movements in Afghanistan in 2001, in support of Operation Enduring Freedom, and Iraq in 2003, in support of Operation Iraqi Freedom. Regarding unconventional military actions executed unilaterally, they are much less known because they were conducted undercover. However, worth mentioning are the USSF actions conducted in

²⁰ F.M. 31-21, *Special Forces Operations*, Department of Defense, USA, 1974, p. 35.

²¹ Irregular or paramilitary forces used by USSF in order to substitute the necessary of forces and to conduct operations in support of US objectives. The main difference between surrogate and indigenous forces is that the latter are formed by natives of the respective area while the former may be foreign entities.

²² UAR – Unconventional Assisted Recovery: Evader recovery conducted by directed unconventional warfare forces, dedicated extraction teams, and/or unconventional assisted recovery mechanisms operated by guerrilla groups or other clandestine organizations to seek out, contact, authenticate, support, and return evaders to friendly control.

²³ Colonel (ret.) Aaron Bank, *From OSS to Green Beret: The Birth of Special Forces*, New York, NY: Pocket Books, 1986, p. 179.

Europe after the end of the Second World War in order to support and develop the capabilities of resistance movements in the event of an occupation of Europe by the Soviet Union. This operation was codenamed *Gladio* and USSF have recruited indigenous members from Europe, which they trained, organized in cells and equipped to perform specific guerrilla warfare actions and sabotage in the event of an invasion of Western Europe by countries of the Warsaw Pact. Such cells have been set up and operated in several European countries such as Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Portugal, Spain, Sweden and also Turkey. Furthermore, similar operations were executed in Afghanistan in the 1980s during the war with the USSR, where the USSF supported, organized and coordinated the actions of Afghan Mujahedeen.

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SPACE APPLICATIONS IN SUPPORT OF MILITARY ACTIONS¹

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Abstract: *The paper aims to review the main space techniques and technologies in support of planning and conduct of military actions as well as the information management required for successful implementation. In this context, the paper presents the basics of satellite communications systems, of space surveillance and tracking, and aspects relating to critical space infrastructure. International programs are reviewed with regards to space sphere, to which Romania participates through the Romanian Space Agency (ROSA), i.e. NATO, European Defence Agency (EDA), the European Space Agency (ESA) and the European Commission (EC). Outside the informational aspect of this presentation, the paper aims to build an argument for the commitment of the beneficiaries to actions that set up requirements and space systems architectures useful in the military context.*

Keywords: *Space, critical infrastructure, information, communication, surveillance.*

Introduction

As good of global common use, space does not comply with international conventions on land borders, thus satellites launched by various states freely fly in outer space above other states, fact that would not be possible on Earth without a very accurate regulatory framework. Besides the advantage of having freedom of movement, including for military activities, it has the advantage that the Earth's surface features (such as land) does not significantly affect the flight of spacecraft in outer space. Instead, its movement is regulated by orbital mechanics that allows the satellite to remain in orbit for long periods of time.

However, the outer space environment affects the performance of both terrestrial and space-based assets. Events such as space weather, fragments of natural or artificial space bodies, affect the smooth operation of space systems as well as of other critical infrastructures and services on the ground. The specificities of the outer space environment and its impact on the operational results, is essential for understanding the capabilities and limitations of space advantages in support of military operations.

The specificities of outer space, as well as the difficulty of having access to it, affect all armed forces - allied, adversaries or neutral. For this reason, features and phenomena present in outer space must be very well understood, both for involving space capabilities in military operations, but also for understanding the threat and the use of these systems by an opponent force, and therefore attempting to limit its actions in space.

Both civil and military sectors are increasingly dependent on space capabilities, and consequently their vulnerability translates on the smooth running of specific activities on the

¹ This article is based on research undertaken under the SCIPRO Project – „Space Critical Infrastructure Protection at ROSA”, co-funded by the European Union from the Regional Development European Fund, Operational Program Competitiveness 2014-2020, project ID: P_37_790, contract no. 94/09.09.2016.

ground. Space infrastructure is complex, containing ground stations, launch and control facilities, production capacity of satellite components, satellites and space infrastructure, communication links, all constituting potential sources of attack by hostile elements.

Through diplomatic, legislative, economic and military measures, military decision makers can identify and take actions to limit potential opponents to annihilate their own space capabilities. Spatial integration of its potential in their own operations represents an advantage and a growth factor for the capacity of the operational forces.

Due to the fact that communication and information systems based on satellite platforms are available on the long run, commanders at various echelons can have support in carrying out specific operations whenever required and in extended geographical areas.

Activities in support of defence and security in international organizations to which Romania is part of

As a member in organizations such as NATO, EU, EDA, ESA, Romania respects and implements the concepts of these organizations on policies and programs. The following present some of the programs of these organizations of interest to Romania.

North Atlantic Treaty Organization (NATO)

Among the attributes of outer space, some such as the high level of dangerous radiation, extreme temperatures, or the risk of collision with natural and artificial particles, causes high costs for implementation, operation and maintenance of satellite platforms. In addition, space platforms operated by states or at multi-organizational level are reglemented by treaties and complex procedures that take account the interests of the actors involved. These issues, plus the need to secure the sent to and/or received information, with implications for political and military joint operation of satellites, result that NATO does not have its own satellites and no comprehensive policies on specific activities in space, relying on Member States' space technologies². Currently, the main body dedicated to space activities is the Joint Air Power Competence Centre (JAPCC)³ with responsibilities for training and education, analysis and experimentation. JAPCC structure acts as counseling and is focused on development of space policy within NATO and for promoting a strategy in this regard.

The Agency NATO Science and Technology (NATO-STO) comprises a group concerning the outer space (Space R&T Team), composed of experts from the government, academia and industry, with coverage of all STO panels, having national representation in planning, procurement, testing, and operational evaluation. The activities of this team follow three objectives: spatial capabilities for NATO force protection; Space Situational Awareness, capabilities and NATO equipment that do not belong to NATO; maintaining NATO capabilities in hostile environments. Between the working groups of NATO-STO relevant to Romania are SET-147 and SCI-229, as follows:

The SET-147 group on "Microsatellite and Surveillance Area" had as major objectives investigating the possibilities of using microsatellites as a platform for space surveillance from space and the identification of missions to which microsatellites may be relevant; calification of capabilities and identification of limits of NEOSSAT Canadian satellite; ground and space experiments of space surveillance conducted jointly by NATO countries participating in the project; and interoperability demonstration exercises of NATO member states.

The SCI-229 group on "Environment Space in Support Awareness Space Situational by NATO" gathered the effort of specialists for analyzing the effect of space risks on NATO's

² See "Space Security" [online] <http://natowatch.org/space-security>, last accessed March 2017

³ See Joint Air Power Competence Centre [online] <https://www.japcc.org>, last accessed March 2017

interests, the assessment of predicting tools for the risks in outer space, demonstrating the utility of some methods and recommendations regarding actions to be taken, identifying the shortcomings related to existing tools, as well as the education of NATO officers conducting space operations.

European Defence Agency (EDA)

The EDA's activities related to outer space range from harmonization of military requirements, identification and initiation of new opportunities for "Pooling & Sharing" and conducting preparatory studies in areas such as satellite communications, Earth Observation, command and control, protection of space and of critical infrastructures from the ground, and research on vital space technologies. In this respect, in order to ensure an effective coordination of dual-use technologies, as well as the capacity development for all national defence forces, and the implementation of the CSDP, EDA mediates the dialogue with all EU key actors - either from industry or partners, such as the European Space Agency.

On 20 June 2011, EDA Chief Executive, Mr. Claude-France Arnould, together with the Director General of the European Space Agency (ESA), Mr. Jean-Jacques Dordain, signed an agreement of cooperation between the two agencies, which provides identification of gaps or shortcomings that could be covered by using space technologies through effective implementation of relevant policies at EU level; the identification capabilities that can be shared or complementary operation conducted by the two organizations; coordination of research, technology and demonstrative activities, including access to the results of research conducted by the two entities; investigation of existing synergies between the programs dedicated to EDA and ESA.

EDA also has collaboration agreements with other institutions. For example, such a covenant was signed between EDA and the EU Satellite Data Centre (SATCEN) in 2004⁴.

European Union / European Commission

The programmatic document of the Council of Europe regarding the space strategy⁵, confirms that space services can strengthen the EU and Member States' capacity to address and solve common security and defense issues. It states that although some space capabilities should remain under national control, in many other areas creating civil-military synergy can reduce costs, increase societal resilience and improve efficiency in providing various services. It is expected that the EU military action plans would address these synergies between the civil and military sectors, a key theme for highlighting the important role of space-based services. In this context, the EC will work closely with EDA and ESA to assess the needs of providing secure communications services for users in the EU and national realms of security and defense. In addition, the EC will assess the use of Galileo and Copernicus services to increase EU autonomy in GNSS and Earth Observation.

From a security perspective, the European Space Policy refers to two processes: security of space and security from space⁶. "Security of space" covers the monitoring and protection of satellites in order to ensure their uninterrupted operation. Satellites can be affected by space weather and space debris, as well as from possible collisions with asteroids located in close proximity to Earth. "Security from space" encompasses the use of space infrastructure to protect against security threats that are increasingly diverse, less visible and less predictable than in the past, such as cyber and laser attacks, jamming, missile kinetic

⁴ see EDA and EU Satellite Centre (SATCEN) formalize cooperation with exchange of letters [online] [https://www.eda.europa.eu/info-hub/press-centre/latest-news/2016/07/18/eda-and-eu-satellite-centre-\(satcen\)-formalize-cooperation-with-exchange-of-letters](https://www.eda.europa.eu/info-hub/press-centre/latest-news/2016/07/18/eda-and-eu-satellite-centre-(satcen)-formalize-cooperation-with-exchange-of-letters), last accessed March 2017

⁵ Brussels, 26.10.2016 COM(2016) 705 final - Space Strategy for Europe

⁶ See inter alia, European Commission, Space and Security [online] http://ec.europa.eu/growth/sectors/space/security/index_en.htm, last accessed March 2017

attacks, or electromagnetic pulse attacks. In this respect, the support of space technologies is indispensable: the Copernicus program contributes to maritime surveillance and border control, the Galileo navigation system facilitates speed of response, whereas the satellite communication supports security and critical infrastructure protection missions.

EU missions for crisis management, such as EUFOR Chad / RCA, rely on satellites for secure communications between headquarter and the operational units on the ground⁷. In addition, these missions use satellite imagery for mappings, especially due to lack of local ground-based infrastructure for communications, but also because the large size of the theater of operations.

European Space Agency (ESA)

The European Space Agency (ESA) runs important programs in terms of security and defense, to which Romania participates since 2012, after joining ESA. These programs are generally carried out in coordination and cooperation with EDA and the European Commission, ESA being the entity research for product and space technologies development, while EDA and the EC are operational entities which provide dedicated or shared many types of users.

Within the context of telecommunications and integrated space applications program (ARTES)⁸ the following have been achieved:

- Certification requirements and performance standards for satellite communications links with PSURs, air traffic services (ATS) and studies in support of system concepts for satellite command and control of UAS;
- The analysis of cyber threats on communications networks (SATCOM) and impact on society; interruption of service due to cyber attacks is the fastest growing societal threat to space systems, ESA having very specific needs to protect the European investments from cyberthreats, having both operational nature, as well as existing hidden or latent threats situated inside the spacecraft;
- The European system for collecting and transmitting data (EDRS), contracted through public-private partnership with Airbus Services; first component of the EDRS system has been a communications satellite launched on 29.01.2016, the first component of was, the beneficiaries of this scheme are those of Earth Observation missions (Copernicus Sentinel) but can log also the users of security systems;
- The spatial automatic identification system SAT-AIS, which is a coastal system for short distances, used to identify ships from ground stations.

A significant achievement within the "Human spaceflight and robotic exploration" is Vessel-ID aimed at monitoring system for maritime traffic. This includes an automatic identification system, with a station located on the International Space Station (ISS), having a range that covers a large part of the world oceans. Ship identification data, position, route, cargo and map information are continuously received from the ground station, at ESA's Columbus Control Centre in Germany and sent to the operations center in Trondheim, Norway.

The GOVSATCOM⁹ program aims at preparing the EU member states for the next generation of satellite communications intended for the governmental sector. The European Commission in close collaboration with ESA and EDA leads the initiative. EC is considering including some of the new activities in the EU space programs, as well as high-level technical specifications of providers of security services in the governmental sector - civil protection, humanitarian aid, common security and defense missions, maritime and border surveillance, monitoring of critical infrastructures, data transmission and Arctic communications.

⁷ Remuss, N-L (2010) NATO and Space: Why is Space Relevant for NATO? in *ESPI Perspectives* no.40, October 2010, European Space Policy Institute, pp. 1-9.

⁸ See Programul de telecomunicații și aplicații spațiale integrate [online] <http://www2.rosa.ro/index.php/ro/esa/programe-optionale/148-telecomunicatii-si-aplicatii-integrate-artes>, last accessed March 2017

⁹ see GOVSATCOM [online] [https://www.eda.europa.eu/what-we-do/activities/activities-search/governmental-satellite-communications-\(govsatcom\)](https://www.eda.europa.eu/what-we-do/activities/activities-search/governmental-satellite-communications-(govsatcom)), last accessed March 2017

Earth Observation¹⁰ - The Copernicus¹¹ program provides products and services for the management and protection of the environment and of natural resources, as well as for providing security, some examples being: monitoring air quality, flood warning, early detection of drought and desertification, early warnings on hazardous weather phenomena, detection of oil spills, food security, humanitarian aid, emergency response management, mitigation the impact of disasters, support for peacekeeping missions, maritime surveillance and border control.

Programs of satellite navigation (Galileo¹², EGNOS¹³, Galileo Second Generation) - The European satellite navigation system Galileo, will ensure accurate positioning and navigation systems for worldwide users. The final constellation Galileo will consist of 24 satellites that will revolve around the Earth at 23.222km, the system will be interoperable with GPS systems (US) and Glonass (Russian). EGNOS is a system consisting of a network of sensors located on the ground and three geostationary satellites, which will ensure more accurate GPS signal and European usage. When Galileo will be fully operational, jointly with EGNOS will meet many user requirements, such as "Open Service", "Public Regulated Service", "Search and Rescue Service", "Safety-of-Life Service", as well as "Commercial Service".

Space Situational Awareness¹⁴ program aims to develop a European system capable of providing timely data and reliable information and services on the space environment and the risks on space and ground infrastructure. A new concept called "space traffic management" (STM) aims to integrate SSA with relevant space activities, such as maintaining security and safety of operations in outer space. At EC level since 2014 has constituted a committee for monitoring and tracking space (SST), which has the mission of building the base of normative acts for achieving formal framework for European SST. Romania participates regularly in the work of this committee, looking into the possibility of joining the European consortium for SST¹⁵.

Critical space infrastructure

As it shows from the amplitude of the institutional interest shown in previous section, space systems are essential for the proper functioning of commercial, scientific and military applications in contemporary society. From facilitating communications, providing up to large image and positioning services permanent space infrastructures and provides current operational information needs of the planet, in various forms. In addition to support services, space systems are essential to protect the Earth from major threat by weather possible catastrophic collision with objects from space. Also, space technologies provide early warning of solar storms forecast balance by electromagnetic radiation emitted can severely disrupt the systems from the ground, thus affecting human activity. Thus, vital services such as power or water supply, information and communication technologies, even waste management are directly dependent on the smooth operation of space systems.

The importance of space systems for contemporary society places them in the realm of

¹⁰ see Earth Observation activities [online] http://www.esa.int/Our_Activities/Observing_the_Earth, last accessed March 2017

¹¹ see Copernicus [online] <http://www.copernicus.eu>, last accessed March 2017

¹² see Galileo [online] http://m.esa.int/Our_Activities/Navigation/Galileo/What_is_Galileo, last accessed March 2017

¹³ see EGNOS [online] http://m.esa.int/Our_Activities/Navigation/EGNOS/What_is_EGNOS, last accessed March 2017

¹⁴ see Space Situational Awareness [online] http://www.esa.int/Our_Activities/Operations/Space_Situational_Awareness, last accessed March 2017

¹⁵ see <http://www.eusst.eu/project/why-sst/>, last accessed March 2017

critical infrastructure, whose disruption or destruction would cause major and lasting damage that could endanger both lives and proper functioning of the entire society. Representing the technological "backbone" for other critical sectors such as energy, transport and central government, space infrastructure is vital for command and control systems on the ground in situations as diverse as crisis management, precision agriculture and telemedicine.

Currently, there are 1,419 active satellites¹⁶ orbiting the earth, providing much of the world's current services and functions. For the most part, these satellites are placed on LEO and GEO orbits. Equally, the space no longer belongs only to a few states, but about a third of the world's countries now have access to space. Equally important is the fact that the destination of the satellites changed - if at the beginnings of space exploration, satellites had rather a military purpose, currently, most satellites are used commercially.

Space systems form an independent system of systems, essential for the maintenance of vital societal functions and wellbeing, and whose destruction or malfunction could have a significant impact at the societal level. In addition, these infrastructures are fundamental to the defense capacity of a country - all Pentagon describes space technologies as vital for maintaining superiority of US military and whose acquisition by potential adversaries would lead to strengthening military capabilities-industrial thereof, to the detriment of security of the United States of America. This size is also true in other countries that aim to protect citizens and their essential services.

The global dimension of critical space infrastructure turns any security event into a very seriously one. While a certain critical infrastructure interruption can have consequences felt at national or regional level (a good example can be the power failure in the United States in 2003), destroying a critical space element impacts on a planetary level. Therefore, through the magnitude of impact and affected communities, space infrastructures malfunction may endanger almost all other key segments of human activity.

Not only the dual use character of space technologies and the planetary impact of the failure of such space systems are unique, but also the location of components. Unlike terrestrial critical sectors, the space segment contains both space and ground elements. Space segment contains satellites, space probes (e.g. telescopes and spectrometers) and Earth Observation technologies. The ground segment contains those computer systems, software, telecommunications networks and other resources that permit the launch, maintenance and analysis of data recorded by the space segment. The administrative-political constellations of space policies and communities of national and international actors governing this sector complement them.

To these elements add a number of features such as the high cost of space technology that gives them certain operational rigidity and predictability to their destination. Unlike the vast majority of terrestrial systems, mission and operating parameters and orbit satellites are defined in advance of their launch into orbit, and hardly can be changed at a later date. This rigidity can be both strength and a point of vulnerability. The anti-satellite weapons (ASAT) are based precisely on the fact that space systems can modify operating parameters, their visibility in the sky at cyclical intervals providing the opportunity of being targeted for destruction.

Therefore it can be concluded that space systems are not only key to the proper functioning of society, but also vulnerabilities activated by cosmic and military threats. Outages of such systems can have fast repercussions on the safety of people both directly, by interrupting vital services, and indirectly due to the domino effect that could affect the adjacent critical services. For example, severe geomagnetic faults can break both power and other essential services for the population such as emergency healthcare, drinking water

¹⁶ See *Union of Concerned Scientists* [online] <http://www.ucsusa.org/nuclear-weapons/space-weapons/satellite-database#.WLw-QRhh3yI>, last accessed March 2017

supply, telecommunications and rail transportation. In the same logic, these interruptions of vital services can be deliberate, constituting itself in acts of violence against society.

Establishing the dependencies between different fields of human activity specific to space services constitutes a first step in evaluating their criticality. Strong solar storms can damage satellites and thus disrupt networks, among others, power supply, telephony and Internet operation, sea and air circulation. Solar flares can produce powerful X-rays that can block high frequency radio waves used for wireless communication. Solar energetic particles (protons) can penetrate the satellite electronic shell and cause system failure. Moreover, solar particles can cause geomagnetic storms on Earth, and may introduce new currents that can damage the entire electricity grid. Geomagnetic storms can alter the signal from radio navigation systems (GPS and GNSS), and can be a risk for passengers and crew for aircraft at high altitudes near the geomagnetic poles¹⁷.

Among the most indispensable space technologies are early warning systems provided by telescopes and solar probes, optical and radar networks, critical for their potential in discovering and in diverting dangerous spatial objects, as well as satellite navigation systems, providing access to emergency communications, financial services and other essential services to society. In addition, vital activities such as defense and national security, administration, chemical and nuclear networks depend on GNSS (Global Navigation Satellite System), any malfunction can disrupt most of the civil services. Integrated applications such as telemedicine may provide useful information in case of disaster. Also, malfunction of systems that manage precision agriculture can have devastating long-term effects on the security of supply for the population.

Failure of critical space systems may have devastating effects on areas such as industry, agriculture, banking, political and thus on the welfare of citizens. For example, the banking sector uses GPS satellites to mark time on banking transactions. Precision agriculture uses spatial infrastructure to assess the existence of variables in the field, such as sowing density, to estimate fertilizers, but also to estimate the harvest. Other applications such as traffic control, railway, highway traffic management, commercial aviation and marine navigation satellites are dependent on GPS locator and operational safety. Lack of integration of spatial information would lead to paralysis of whole sectors of activity.

Of systemic vulnerabilities resulting from the shutdown of a component affecting the smooth running of the entire infrastructure, are cascading outages - an unforeseen chain of events that disrupt normal operations by similar failures that propagate through the system of systems. The accumulation of errors is another important aspect: once the space infrastructures have

The effects of these disruptions were visualized through a series of exercises organized by NASA and G. Marshall Institute between 2008 and 2011, entitled " A Day Without Space"¹⁸. Thus, there have been identified systemic vulnerabilities that were hardly noticed in the absence of catastrophic events, as well as the response in the event of failure of the critical space and ground systems. This set of exercises demonstrated, besides the need to integrate space systems with terrestrial ones, the need to create a common framework for risk and vulnerabilities assessment.

¹⁷ National Science and Technology Council (2015) *National Space Weather Strategy* [online] https://www.whitehouse.gov/sites/default/files/microsites/ostp/final_nationalspaceweatherstrategy_20151028.pdf, last accessed May 2016, p. 12.

¹⁸ Marshall Institute (2008) *A Day Without Space: Economic and National Security Ramifications* [online] <http://marshall.org/space-policy/a-day-without-space-economic-and-national-security-ramifications/>, last accessed May 2016

Satellite communications programs for security (GOVSATCOM)

Security crises and the need for satellite communication

Recent history has shown that telecommunication networks usually fail during terrorist incidents, natural disasters or in case of agglomerations of people, such as sporting events. For example, the Brussels crisis caused by the terrorist attacks of 22 March 2016 showed, among other weaknesses, a failure of mobile communication networks. A further investigation on determining the causes of interruption of communications system for security services and emergency emphasized that the ASTRID system has been operating for less than two hours and emergency services were forced to use WhatsApp to organize efforts in case of crisis. A police spokesman confirmed that the system encountered malfunctions due to overloaded lines.

During the attack at Boston Marathon on April 15, 2013, hundreds of thousands of people tried to get in contact with friends or relatives, causing interruption of the main mobile phone networks such as Verizon, AT & T, Sprint, T- mobile. Customers of mobile networks has been suggested them to use alternative methods of communication such as email, so part of the voice traffic to be used by the authorities present at the spot. It was explained that although mobile networks have a bandwidth more than sufficient for most everyday situations, in case of disaster, whole geographic regions might be left without network due to increased call volume.

During a natural disaster, communications can fail, either because of strong winds, floods or earthquakes that cause damage to communications equipment, either due to traffic congestion caused by large data traffic.

Satellite communications (SATCOM) plays a central role in securing governmental communication, being used especially when other means of communication are not possible, reliable or available. In addition, for a range of government services, satellite communication is an essential tool, especially in crisis situations or in other cases related to the security of citizens. Satellite communications complement and extend terrestrial communications networks.

MILSATCOM is a network that is highly protected and guaranteed by SATCOM, generally supported by military systems, offering a capacity of protected satellite communications, anti-jamming, telemetry, very safe tracking and command (TT & C), complemented by a ground robust and durable segment. Those MILSATCOM systems are designed primarily for military purposes and are under national control.

In November 2014, the Management Board of the European Defence Agency (EDA) composed of EU defense ministers, approved a document of military requirements on GOVSATCOM called Personal common target. Furthermore, EDA launched a study in June 2015, to continue the analysis on the defense needs of GOVSATCOM.

In June 2016, the European Parliament adopted a report entitled "Space capabilities for European Security and Defense" in which it "welcomes the work done to give the EU autonomous access to governmental satellite communications (GOVSATCOM) and invites the Commission to continue to make progress this regard, recalls that the first step in this process was to identify the needs of military and civilian by the Commission and the European Defence Agency, respectively, and that the initiative should entail pooling demand and should be designed in a way that best corresponds to the needs identified."

EU GOVSATCOM – Objectives, Users and General Features

The GOVSATCOM program of the European Commission aims to ensure secure satellite communications services for national and EU governmental authorized users, such as critical infrastructure national and European owners and operators. In some cases, the

GOVSATCOM service might fulfill or substitute the existent COMSATCOM services. There have been identified the following communities of users: the military forces of member states EU (national or allied) services, border surveillance, maritime community, police missions, civil protection, humanitarian aid, EU external action (including CSDP missions and operations), civilian and military critical infrastructure operators of air, rail and road traffic management, space infrastructure and the services of EGNOS, Galileo, and Copernicus, institutional and diplomatic networks of EU countries.

GOVSATCOM service for crisis management

GOVSATCOM will enable the delivery of high-speed satellite communications in crisis areas. This service will be made available to the military forces of the EU Member States, the crews of civil defense, police and security personnel, CSDP missions and operations, humanitarian aid crews, including NGOs operating in the EU or Member States delegations involved in local and national crises, other governmental actors involved.

Although crisis management missions and operations are likely to take place anywhere in the world, it is considered the most stringent requirements are in continental Europe and neighboring regions (Africa, the Mediterranean, Middle East, Arctic, Atlantic). Also, the solutions must cover GOVSATCOM distant territories, but under the control of a Member State of the European Union.

The EU GOVSATCOM service will be available simultaneously in 15 crisis areas, including outside of the continental territories of the EU but are under the control of EU states. Intervention Units will benefit from GOVSATCOM on an area of 1000 km in diameter around the area of crisis.

The GOVSATCOM service users from operational area, will be able to communicate with users in the same area, will support the holding unit and the coordination centers, including support communication and information from NATO (ACO) when activating the "Berlin Arrangement" services provided by local networks of users, public communication networks, including the Internet.

Services provided by EU GOVSATCOM will include video "on the move" (short duration), video conferencing, speed data communication (VSAT), data transfer at high speed, voice, images, broadcast / multicast service IP and e-mail, messaging, chat, secure remote access to specific systems.

Main applications will support communication structures between different command and control centers (in the military system between the strategic, operational and tactical). Crisis management will allow subsequent GOVSATCOM telemedicine applications, critical for monitoring health, such as X-Ray, CT (Computerized Tomography) and MRI (Magnetic Resonance Imagery) logistical and administrative support for military operations management, including movement of personnel planning, material movements, the purchase of components and systems; surveillance missions.

With respect to time constraints, EU GOVSATCOM service will be available in less than 12 hours if the unit is in the area of intervention or engagement in less than 48 hours otherwise. The service can remain operational as long as intervention units are not available in land or other means of communications. In the particular case of CSDP operations, the duration can be extended up to two years.

Surveillance programmes for space situational awareness (SST / SSA)

Dangers caused by decommissioning satellite infrastructure, space destructive effects of extreme events, are recognized as major risk factors and are recorded among civil emergencies. Many countries have already integrated methods of analysis of conditions in

space and defense strategies against natural disasters. There is an increasingly interest, for greater preparedness against natural disasters caused from space.

In the US, the general objectives of the space policy aim at enhancing stability in space with its own and international measures, to promote the safe and responsible use of space, improving information collection and dissemination to avoid collisions, protecting critical systems and spatial infrastructure support, paying particular attention to the critical interdependence of space and information systems, improved measures to protect space fragments.

In Europe, most countries members of the European Space Agency (ESA) formed expert groups to assess the impact on national systems of spatial events. Action plans were developed for emergency under certain scenarios based on known major events in history. In the declaration adopted by consensus on the Program Committee ESA / SSA recognizes "... the need in Europe a system SSA aimed at supporting the use of independent access to space for scientific research or conducting services by providing data the timely and quality information, services and knowledge of the environment, threats and the sustainable exploitation of space".

Romania, as a member of ESA, participates in the program "Space Situational Awareness" from 2012, year in which was signed joining this program, in its second funding cycle. Romania as a participant and contributor financially to the program optional ESA explicitly express their desire to invest in this area in the short and medium term.

The need to build a system of European Space Situational Awareness (SSA) with civilian and military purposes has been established at the Council of Europe and Security Committee, was signed the agreement between ESA and the European Defence Agency (EDA) on promoting European synergies between the civil and the military, called "Space Situational Awareness-primary requirements for civil and military users." Parliament of Europe decided to support the financial and political establishment of a framework support for space surveillance and tracking (SST) in order to prevent damage to space infrastructure and predict trajectories dangerous fragments that resumes uncontrolled into the atmosphere to provide data to governmental bodies and civil protection. Romania agreed with the issuance of this decision, participating in the development and provisions of implementation are prescribed steps and criteria for participation of Member States in the European SST consortium.

Relevance to the military

According to the US Air Force military doctrine, SSA contributes to overall situational awareness in battlefield necessary for the planning and execution of military operations.

SSA importance for ISR (Intelligence, Surveillance, Reconnaissance)

For "Intelligence" realm, SSA provides data communications and capabilities of the opponent and / or third parties used in the exploitation of space to create their own superiority. Thus, it can collect information on how the enemy operates, the impact on their military activities, vulnerabilities and strengths of the opponent's space infrastructure or indications of hostile intent on its. Characterization and analysis of capabilities provide spatial data to support planning of appropriate defense measures.

"Surveillance" is a permanent activity. Under SSA through supervisory action is pursuing artificial objects in space in order to maintain the safety of the critical space infrastructure, issuing warnings or alarms and developing products for "Intelligence". The space events tracked include satellite, launches of anticipated or unanticipated artificial objects reentering the atmosphere and disturbance produced by spatial weather (SWE) on critical infrastructure in space or on the ground. For the assessment of potential threats through enemy satellites and to identify opportunities to define their own missions, it is necessary to establish and update a catalog of satellite data.

"Reconnaissance" provides detailed information and specific data on specific spatial objects and their locations required for analyzing and evaluating the operational environment. Data obtained on the recognition of space objects in the form of optical imaging, electro-optical or radar without being limited thereto. For example, "intelligence" signals issued by some satellites may be subject to recognition activity.

SSA importance for monitoring the impact of the space environment on military actions

SSA includes characterization and evaluation of the space environment, such as solar flares and their impact on critical satellite infrastructure. Environmental monitoring in space helps forecast the impact on communications, including civil and military communications on platforms for air and land, of space weather and inoperable space fragments of infrastructure.

Predicting events associated to space environment are important for the smooth conduct of military operations and can help identify differences between natural phenomena and intentional attack (jamming cyber attack), the space systems and terrestrial improved ability of decision makers to take appropriate measures.

SSA importance for Command and Control

There is a correlation between the C2 and SSA, as C2 can provide data to the SSA on the situation of their forces and SSA can provide data on the degree to which the capabilities of integrated space (eg GPS, Galileo, Copernicus) may contribute to the smooth conduct military operations or are affected by risks managed by SSA.

CONCLUSIONS

Space technologies, data and services provided by implementing these technologies have become indispensable in our everyday life. Use of mobile phones, automotive navigation systems, satellite TV broadcasts or even banking, is an example that we find routinely. Satellites can provide useful information in crises, agriculture can benefit from better land use, transport networks and energy can be more efficiently exploited through satellites.

Space technologies, data and related services, support the policies of nations, including security and defense policy.

Adding the benefits of discoveries in the field of space assets in conventional military equipment and military activities can contribute significantly to their potential, giving space technologies the attribute of "force multiplier". In some countries, particularly in the US, space technologies and techniques are not only a force multiplier, but also a means of controlling the space to determine their freedom of action and limit the space activities of hostile elements.

Much of dual use space technologies, are used by both the civil sector and the military. Common examples relate to imaging satellite (VIS, IR, UV or radar / SAR), communication systems and / or systems GPS or GNSS location type. The questions of how offensive or defensive are these technologies represent a challenge and an important topic, not only academic nature, but also one with political and military implications.

The paper aimed to constitute a reason to increase synergies in the military field and stimulate the interest in cooperation with economic and research organizations, for the pragmatic approach of topics in the sphere of spatial identification and achieving optimal means for bringing the benefits of space technologies implementation in various areas of specific military activity.

ASPECTS REGARDING OPERATIONAL PLANNING AT OPERATIONAL AND TACTICAL LEVELS

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Abstract: *Planning, as a function of military action management, may be regarded as a succession of activities relying on certain principles and performed with certain methods and techniques that might assure the accomplishment of the established goal. According to the planning echelon, there are peculiarities and specific features of the planning process given by the amplitude and complexity of actions. We may consider that the planning process at tactical level is similar to that undertaken at operational level, with respect to its stages and sequencing, but it is different from the perspective of the resulting outcome and its complexity. The differences between the two processes thus become important to the planners at both levels, as an accurate understanding in this case may make the difference between a successful planning process and a less appropriate one.*

Keywords: *tactical, operational, levels, planning.*

Any armed conflict, irrespective of its dimensions or participating forces, is inevitably related to the terms „operation” and „operational planning”. The main Romanian Dictionary defines the verb *to plan* as „*to make a plan; to program, to organize and to lead something according to a plan; to organize an activity, making the plan according to which its various stages will take place*”¹. Thus, in the simplest understanding of the term, to plan means to prepare for the events which are going to happen in the near or distant future.

Within the military domain, operation planning in the process of military command is defined as „*a series of complex activities performed by commanders and their staffs, at all the levels of military command, in order to prepare and conduct campaigns and military operations*”². In generic terms, this can be described as an iterative political-military dialogue, triggered by the need for an operational response to a specific situation.

Operation planning is aimed at „*reaching a certain end-state and accomplishing some strategic-military and non-military goals, established at the level of national authorities, taking into account the limitations and material constraints imposed by these authorities*”³. Thus, planning a military operation is based on the necessity to solve a current crisis or a crisis in progress or to combat a threat or aggression. The decision to solve the crisis and, implicitly, to trigger the operational planning process at the level of Romanian Armed Forces is a prerogative of the Supreme Council of Defence – Romanian CSAT.

Military operational planning is performed specifically, but not independently, by the specialized personnel at every level of the warfare: strategic, operational and tactical.

Even if the manner of approaching planning and the planning range differs from one level to another, the planning process and its general organization are similar, the difference being made by the complexity of the processes undertaken and the resulting outcome.

At national level, the responsibilities regarding operation planning, specific to every level of planning, are regulated by the Doctrine of Operations Planning in Romanian Armed Forces. Thus, at strategic level, „*operation planning is the responsibility of Romanian General Staff / SMG or of the National Military Command Centre / CNMC and focuses on*

¹ Dicționarul explicativ al limbii române, Ediția a II-a, Univers enciclopedic, București 1998, p. 802.

² Doctrina planificării operațiilor în Armata României, Statul Major General, București, 2013, p. 7.

³ Manualul de planificare a operațiilor, Statul Major General, București, 2016, p. 13.

*generating and the manner of using military force and capabilities*⁴. At operational and tactical levels, operation planning is the responsibility of the commander of the joint task group, in turn, of commanders of tactical units and major units and is meant to „*achieve the design, execution and sustainment of campaigns and major operations*” as well as to settle the details „*of the operation plans at operational level for conducting battles and military actions*⁵”.

To plan means to establish / identify / become aware of objectives / goals as well as of the ways to accomplish them. Planning results in documents characterized by quantitative and qualitative parameters, deadlines, resources allotted, and tasks to be handled by subordinate echelons. From this perspective, differences appear according to the level where planning occurs.

Most planners agree that there are differences between the planning processes undertaken at operational and tactical levels. If one is asked to specify or exemplify these differences, the answers received would be quite different according to the echelon the planner belongs to and his / her experience in operation planning. The reason for this is that both the Operations Planning Manual and the planning manuals or the planning instructions elaborated at the level of services describe in detail the processes themselves and the resulting outcome, without making connections or comparisons between them and the processes undertaken at the level of superior echelon structures. Understanding these differences, as well as the mechanisms and processes they rely on may be a good starting point for understanding operational planning.

In identifying the differences between the operational and the tactical levels regarding operational planning, the following issues may be analyzed:

- a) The manner in which operational planning for these two levels is approached within the whole architecture of operation planning

At national level, operational planning, both for the operational and the strategic levels is well approached, detailed and exemplified through the issuance in 2011 of Operations Planning Manual and its revision in 2016. Not the same can be said about tactical level planning, as the Operations Planning Manual does not offer the same amount of details and guidance as for the strategic and operational levels, but rather only the recommendation that it can be adjusted for this level too in order to improve collaborative planning. The natural consequence was that each service elaborated its own manual or guide-book regarding planning at tactical level, according to doctrine peculiarities, branches, or the specific features of each structure. Thus, each service has started undertaking the process of elaborating its own documents without having specified the „*key points*” around which it conducts its specific processes. The existence of these „*key points*” assures not only the framework necessary for elaborating documents, but also their uniformity at the level of services.

- b) Characteristics of the level of planning

Planning at the operational level, also known as *joint level*, is related both to planning at strategic and tactical levels, and with the planning process undertaken at the level of various civilian institutions, involved in operation. The successful execution of planning at the operational level is also based on identifying the potential need for interaction with the non-military structures and organizations, present in the operational environment, which may contribute to reaching the desired end-state. Tactical planning is only related to planning at the operational level, as at this level we cannot speak of inter-relating with non-military structures or organizations.

- c) Complexity of the planning process

What should be done? versus How should it be done?

⁴ Doctrina planificării operațiilor în Armata României, Statul Major General, București, 2013, p. 12.

⁵ *Ibidem*, p. 13.

The key element that makes the difference between operational planning and tactical planning is the question whose answer planners have to find during the planning process. In other words, the planners at operational level have to find the answer to the concept question *What should be done?*, while the planners at tactical level have to answer the tactical & execution question *How should it be done?*

This is particularly important for the operational level planners, as this level is the connecting element between strategic guiding and the tactical actions undertaken. If at operational level *What should be done?* is not clear enough in order to reach the desired end-state and the objectives established at strategic level, then it will be rather hard to establish the effects aimed at after conducting tactical level actions. If the operational level planners are not oriented towards „*What should be done?*” in what „*circumstances?*” and with what „*limitations?*” in order to assure the success of the operation, then they will choose the easier and sometimes more convenient concrete manner of „*how it should be done?*”, complicating the work of tactical level planners.

At tactical level, planners are oriented towards „*how it should be done?*” so as the actions performed might result in mission accomplishment and reaching the objectives established at the superior echelon, with the resources available. The basic condition for establishing „*how it should be done?*” is to know the manner in which the planners at the immediately superior level do their job of planning and acting, thus exercising an influence upon the whole planning process. Of course, we should not ignore the fact that the question „*what should be done?*” may also exist at operational level, just as the question „*what should be done?*” may exist at the tactical level, but only occasionally and never with a decisive impact.

The planning process

Another key element that differentiates between the two planning activities is planning itself. Even if the two processes are similar from the point of view of their stages and sequence, they are different from each other due to their outcome and their complexity. Each process takes place within a planning group along six stages. According to the characteristic features of collaborative planning, the planning process at operational level happens at approximately the same time with that at tactical level. The differences between the two processes are given by:

a) The complexity of the process:

- The process undertaken at operational level is more complex and is aimed at establishing the appropriate degree of using the military instrument in solving the crisis;
- The planning process at tactical level is aimed at executing and detailing the plans at operational level.
- Operational design, as a process meant to „*fundament the development of operation / campaign concept and planning documents*”⁶ can only be found according to the provisions of the Operations Planning Manual at strategic and operational levels. It is therefore inappropriate to establish or even discuss about operational design at tactical level.
- In the same manner, we can only talk about effects at the operational level; using effects in the tactical planning process generates nothing but confusion and leads to an overcrowding of the process.

b) The degree of participation

⁶ Manualul de planificare a operațiilor, Statul Major General, București, 2016, p.187

- Operational level planning is undertaken within GPOO⁷. Upon order, the planning group is joined by the planning and liaison teams /EPL within services and, according to the dimensions of the crisis, by the representatives of the non-military participating organizations;
 - Tactical level planning is conducted within GPOT⁸, which is made up of experienced officers in operations planning in own structures. The inter-relating between the planning groups of two or more services is made through the liaison officers.
- c) The degree of details included
- The degree of detailing of the planning process and, naturally, of its outcome too (briefings, concepts, plans, orders) grows as the planning level becomes lower;
 - Precision and accuracy are two characteristics to be found less within operational level planning as this involves a lot of variables and decisions to be made. Moreover, the unjustified attempt to reach a certain degree of accuracy in elaborating operational level plans takes far too long as compared to the results obtained. In addition, the desire to preserve accuracy as a characteristic of the operational level can only lead to elaborating rigid plans, hard to be put into practice by the tactical level.
- d) Certainty / uncertainty
- Operational level planners have to be accustomed to a degree of uncertainty connected to the operational level or the capabilities or way of action of the enemy. In these cases, planners will work with assumptions, which „*will deliberately be considered as real, called planning hypotheses*”⁹. The number of hypotheses made at operational level is quite high and adequate to the type of crisis, the time available, the quantity and quality of available information;
 - The tactical level planners, who also work in an environment with a certain degree of uncertainty, benefit from the directions and guidelines given at operational level, that have the role to reduce the uncertainty and, consequently, the number of planning hypotheses. Tactical level planners tend to reduce to minimum the degree of uncertainty and to increase to maximum the level of details of the operation plan;
 - Regardless the level, the purpose of planning is not to eliminate uncertainty, but rather to reduce it to an acceptable level that might allow elaborating viable operations plans, easy to follow;
 - Uncertainty, as a significant element that needs to be decreased while planning, is connected to the planning time reference. Thus, increasing the planning time reference determines an increase in uncertainty.
- e) Planning time reference
- In operational planning, the time reference varies from one level to another, according to the type of crisis, the actors involved in solving it, the planners’ experience or the amount of forces and means available. If at operational level the time frame is given by the joint character of the operation, at tactical level, the planning time frame is relatively short, the activities being set in time at least for a certain period;

⁷ Operational Level Operation Planning Group (*Grup de planificare a operațiilor la nivel operativ* in Romanian).

⁸ Tactical Level Operation Planning Group (*Grup de planificare a operațiilor la nivel tactic* in Romanian).

⁹ Manualul de planificare a operațiilor, Statul Major General, București, 2016, p. 112.

- A distant time reference gives the planner the necessary time for performing the planning process and elaborating in excellent conditions the specific products; however, as we showed above, this is marked by uncertainty.
- f) Information management
 - Planners work with two types of information and data: *certain*, which are provided at the beginning of planning and constitute the basis of the planning process and *uncertain*, which result from an incomplete acknowledgment of the situation and the permanent dynamics of the operational environment.
 - Information management at operational and tactical levels is conducted in a different manner function of the nature of information, the possibility to gather it, the sources of information or the capacity to monitor the situation in the in the area of interest.
 - Regardless the level, information management is performed in order to support the analysis process or the decision-making process, performed along the different stages of the planning process.

CONCLUSIONS

According to rules and regulations regarding operational planning at national level, no echelon can develop and apply a document or product resulted from the process, without guidance and directions from the superior hierarchical level, or without consulting the subordinate structures. This would not be possible without collaborative planning and unless the planners of the structure involved in planning are aware of the manner in which the planners of the superior echelon perform the same task.

Even if the planning processes at operational and tactical levels are similar, they are not identical and the differences we identified between the two processes are important for understanding and applying the respective processes. The dimensions of the process conducted, the time reference or the degree of details of the outcome are only a few elements that differentiate the two processes.

Planners, especially those at operational level, have to fully comprehend these differences, both for assuring the efficacy and efficiency necessary to the own planning process, and for assuring the guidelines necessary to conducting the process at tactical level.

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THE ROLE OF HELICOPTERS IN PROVIDING COMBAT MEDICAL SUPPORT

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Abstract: *The characteristics of military operations in the 21st century (determined by the structure of the military entities involved and the new strategic concepts) increasingly overlap those of air operations, including here speed, ubiquity and versatility. The quality medical support has always been a key factor in achieving and maintaining the high morale of troops especially through evacuation and rapid medical care of wounded soldiers. In order to play its role, medical support should be properly sized to the area of operations and also should be dynamic and responsive to the changing situation. As a result of the factors mentioned above, presence of helicopters is definitive, and development of their performance becomes more and more imperative. It becomes increasingly important to integrate the medical support in the aero-medical evacuation system, a system that cannot function efficiently without the air component's contribution.*

Keywords: *forward aero-medical evacuation, medical care, helicopters, risks, degraded visual environment.*

Introduction

The continuous transformation of the global security environment leads to significant changes to NATO's strategic concept. Alliance's members are constrained to find ways to build up rapidly military coalitions which can be deployed in any operation theatre for a large spectrum of missions.

Medical support for NATO's operations and policies of personnel's protection in the Cold War era were focusing on the readiness to ensure medical treatment and to evacuate a high number of patients-victims of the military conflicts. Allied solutions for joint participation of many states to create an answer to the medical support needs were not considered necessary and useful.

The new typology of the NATO's force structure and of the new strategic concept is revealing the operation's nature of mobility, interoperability, continuity, joint and multinational such that it allows the deployment of the force groups in any operations theatre, for any type of mission. In the current operations, NATO is especially facing asymmetric threats and terrorism, which are rather components of the civil society but aggressions of some military formations.

Current military operations' characteristics (determined by the structure of the involved units and the new strategic concepts) are overlapping more and more with those of the aerial operations; speed, ubiquity and the versatility are just a few of them.

Concluding, we can say that the nowadays reality is imperatively asking for a system that ensures a correctly proportioned medical support for the operation theatre, dynamic and reactive able to face all changes and challenges. A safe and effective military system, ensuring the medical support for operations, leads to trust of military personnel and general

public in the military force and its headquarters' structures¹. This desire cannot be achieved without the helicopter's contribution and support.

The helicopter seems to be the only method which can ensure the swift evacuation of the military personnel injured in the combat actions because of its the main characteristics: high speed movement over the sinuous terrain and its ability to perform evacuation from advanced extraction point to a medical facility capable to provide the first aid and ensure the minimal landing requirements facts which make the helicopters to be used in places that are inaccessible to other means.

Unfortunately, the aerial evacuation from the advanced zone and the prompt intervention to ensure the medical support for the injured in the military actions is at the crossroads. The specialized aeronautical industry seems not to find solutions in respect of operational performance development of the helicopters in order to satisfy the pilots' exigencies regarding speed, ubiquity and versatility necessary to adapt the medical support system to the operation's mobility characteristic.

Development of medical evacuation from the use of helicopters perspective

The concern for problems of a medical factor during the military actions appeared since antiquity. In 350 BC, in the great army of the Antique Greece, commanded by the emperor Alexander the Great, there was a medical service which included surgeons, physicians and bearers². The result consisted of (noticed by Alexander the Great) reduced deaths, treatment, increased recovery and reintegration chances of the injured and the decreased rate of illness.

The Roman legions have had embeded two doctors for each "Cohort" (battalion), and their skills were tested before they were allowed to practice their knowledge on the soldiers. This practice will be encountered at last in the Civil War. Nurses and orderlies were under the command of the doctors and they were those which were offering assistance to the injured on the battlefield and/or in the campaign hospitals. The latter were actually the first type of military medical personnel.

Also to the Roman Legions, still for the first time, we encounter the first evacuation system in a way similar to the one used today: for the injured were accorded the first aid by the nurses at the accident site and later they were transported to furbished locations or campaign hospitals where they were accorded a higher level of medical assistance. The following contributions (McGrigor with mobile hospitals, Larrey the Napoleon's surgeon which countered postoperative infections³, Letterman, known as "The Father of Modern Battlefield Medicine"⁴ etc.) gradually brought increased motivation for fighting and later, through lessons learned remained after great conflicts, the occurrence of new platforms of transportation and the development of doctrines from the medical evacuation domain.

Therefore, the methods used for the evacuation of the injured military personnel during the fights evolved over time. Any animal species used for traction for military purposes forced, in a way or another, to cover the medical ambulance stage, as otherwise there were used almost all types of vehicles (terrestrial, maritime or aerial). As much as every new vehicle became accessible (from the price point of view, availability point of view etc.), those were adapted to the medical purposes. Mobile infirmaries trailed by horses were

¹ Brig Gen Dr. med. E. Rödig, *NATO Joint Medical Support - Reality and Vision*, RTO-MP-HFM-109, Siegburg, Germany, 2004, p. 1.

² http://history.amedd.army.mil/booksdocs_default.html

³ www.napoleonguide.com./medical_evacuation.htm

⁴ <https://ehistory.osu.edu/exhibitions/cwsurgeon/gburgreport>

therefore replaced with boats, trains and motorized vehicles, and afterwards they were aided by the contributions of aerial platforms.

First step to the aero-medical evacuation concept took place in the 1909 when an USA's army officer designed and build an aircraft intended for patients' transportation. The aircraft, even though it was not finished and it was requesting the passenger to stretch unprotected on the side wing, it successfully flew once. The first evacuation by air in history took place in 15th November 1915, by the time the Serbian army was retreating from Albania, when the terrestrial evacuation of the injured and the diseased from the French Expeditionary Force⁵.

Between the two world wars, the both versions were developed, the military one, and the civil one with aircrafts destined for evacuation, in the civil sector they were significantly used in great countries as Suede, Thailand and Russia. During the Second World War, the necessity dictated the development of an aerial evacuation policy at large scale: the Germans with a military system for evacuation, which until August 1941 evacuated over 280.000 victims, Russians used aerial ambulances during the winter war with Finland, even though it was possible just with minimal care. The mystery of a medical evacuations doctrine especially destined for air forces remains.

The rise of helicopters determined considering the possibility of using those for evacuation. Used for the first time for the evacuation of the isolated patrols' victims from Birmany, the helicopters soon gained the reputation for saving lives and new models developed rapidly being used by the French in the Indochinese after the Second World War, by the English in Malaysia and by ONU in Korea. Helicopters soon took the task of evacuation on short range from the small planes becoming the base of the aero-medical evacuation.

The Vietnam conflict needed an efficient medical evacuation system, based on the use of the helicopters because of the inaccessible terrain and of the changing tactical situations. Even though there are tremendous progresses regarding the aerial platforms, the specially trained personnel, the medical means, the existent doctrines proved vague and confusing leading to low efficiency.

There were problems identified and solved as the elaboration of clear and precise doctrines, the evacuation order chain, the mobile hospitals, the 30-minute evacuation, the escort in unsafe zones, the need of the adequate logistic support, the need to use the windlass into the wooded areas/jungle etc., leading afterwards, during the Gulf War (1990-1991), to the greatest mobilization of the assets destined for aero-medical evacuation.

From the current military operations point of view, the evacuation procedure's latency impact of the patient via helicopters is a significant factor which defines the survival chances of the injured personnel during the operation, given the context in which the performances of the medical evacuation systems are at the maximum point of performance recorded in the history of the military conflicts. This factor is the one which increased the survival rate of the US Army injured military personnel during the Afghanistan and Iraq conflicts up to 89,9% considerable higher than the second World War's survival rate at 69,7%⁶.

Thus, the future helicopter evolution/transformation will have a crucial impact for the increasing of the aero-medical evacuation system performances, in order to guarantee additional progress to the survival chances of the injured military personnel, fighter's morale and public opinion support rate of the political decision regarding the military actions course.

⁵ https://www.icehouse.net/jmakovec/ae_tmlne.htm

⁶ Defence Technology International, October 2010

Medical support in operations, focusing on the forward aero-medical evacuation

Medical support approached from the forward aero-medical evacuation point of view cannot start without the following considerations:

- The effective's ability to meet the job responsibilities without impediments of physical, psychical or social nature (health situation) is a multiplier factor of firepower. Usually, the medical support responsibility lies with the state that the military personnel are a part of. Today, unfortunately, many states are confronting with shortcomings regarding the forces and the means of insuring medical support during the operations, those are generating limitations and constraints regarding the operational capabilities. For those reasons, constantly, multinational options for executing medical support are becoming more and more present and needed and they need a more complex coordination on all levels, especially when the given context of the transition from the long term planning (Cold War) to the current-adaptive one.

- Medical ethics and the specific medical constraints are defining elements that influence the execution method of the medical support into a multinational setting. The Geneva Conventions are just an example. If we add the character of the high specialization of the medical personnel, the environment conditions and the care standards of every state we can observe the organization, the training level, tactical method of manifestation and the operation requirements of the endowed equipment are extremely difficult to manage into a multinational setting.

- Into the geodimensional context of the current multinational operations, the efficient and effective insurance of the medical support depends on the time factor and the aero-medical evacuation (with its subsystems) is almost always the only way which leads us to effective insurance of the medical support. Efficient management of the time of intervention factor regarding the severe injuries is defining for the realization of a favorable forecast from the injured survival chances point of view.

Transportation (evacuation) of the critically injured patients is a high-risk activity. The responsibility to transport patients is more difficult given the military conflict context in which the operational environment conditions, the meteorological conditions, the length and the configuration of the flight routes and the operational aircrafts availability are the factors that makes the mission more complicate. The means of transportation of the injured, may it be through terrestrial transport, as the ambulance, by the railway, maritime transport, amphibious vehicle, submarine, ship or aerial by the use of helicopters or airplanes, it represents particular challenges for the care of the patient.

The main elements that describe the transportation of the injured environment during the military operations are:

- The level of the noise produced by the used equipment during the mission on some transportation platforms interferes with the voice recognition and the technological and obscure physiological sonorous signals;

- The vibrations can damage and worsen the medical state of the patient and they can also damage the medical equipment or affect its stability and accuracy;

- The turbulences are the subject of the entire environment for the care of the patients which are subject to the unpredictable G force and need mechanical systems to insure their safety and methods to immobilize them for the attenuation of the negative psychological effects;

- The environment temperatures are not always well controlled, taking into consideration the altitude changes of the aircraft and they can vary, depending on the aircraft type and dimensions, between the level of the floor and tope of it, creating in to this way challenges for the care of the injured which are sensitive to the thermal shocks or which are

suffering from blood circulation problems. The same fact is also true for the effects of the air from the outside to the vehicles which are not equipped with temperature control mechanisms, for example some of the helicopters or the terrestrial ambulances;

- The level of the relative humidity of the air from the aircraft cabin is usually low, which can raise respiratory difficulty for some patients;

- Usually, evacuation missions executed with aircrafts that are flying at low altitude to maintain the pressure in the cabin between the normal values limits for the human body (under 2500 meters or less); however, this is not always possible, and the medical equipment (for example, ventilation) and also the liquids transfers or some perfusions or drainages (intravenous solutions, thoracic drainage etc.) must be able to resist to violent depressurization of the cabin, without affecting the patients;

- The helicopters and ground ambulances can operate at an altitude of over 2500 meters, but this assumes the exposure of the patients to negative effects generated by the altitude which can worsen their physiological condition;

- The acceleration effects produced during the flight, especially during the take-off and landing procedures can influence the patient management and his state;

- The electromagnetic field in the transportation means is a particular one; the equipment used during the mission must be designed and configured to avoid radiant electromagnetic interferences or conducted by the electronic equipment on board and must prevent malfunctions of the medical equipment resulted after electromagnetic emissions of the devices on board;

- Electrical plugs and adequate distribution systems for the supply of the needed equipment vary depending of the aircraft type and they cannot adapt to the power requirements of the medical equipment without a previous planning and preparation;

- The oxygen quantity for the injured therapy is not available on board, the fact that imposes the development and the utilization of the high capacity light mobile systems;

- The duration of the transportation can significantly affect both the physiology and the injured treatment; the aerial treatment intra theater or the missions executed above the sea are usually time consuming, fact that can contribute to a long exposure of the injured to the environment in which the transportation is done and it needs increased critical treatment capabilities;

- The medical set of devices for intensive care (critical treatment capabilities), found constantly in a development and improvement process, required for the treatment of the injured, are heavy and often are not integrated or interoperable, which requires intensive monitoring, being an ongoing challenge for the situational awareness in the decision-making process;

Aero-medical evacuation is defined as *“air transportation of the patients to and between medical formations, under medical supervision authority as part of the continuity of care”*⁷ which transposed into the area, runs between various points on the battlefield, from the battlefield to the initial treatment medical parties and then to the superior treatment medical parties located anywhere in the area of operations. Understanding this definition, we can notice that the most difficult challenges in the list described above are applicable to this type of transportation of the wounded.

Advanced aero-medical evacuation may be used as deeply, even in the enemy territory, depending on the tactical frame and the available support forces, which is why threats and risk analysis from the tactical field against helicopters have to run successfully before deploying entities designated for the execution the aero-medical evacuation mission in the area of operations (to design and configure suitable aerial system platforms of active and

⁷ Colectiv, *Manual pentru operații aeriene de evacuare medicală*, Editura Militară, București, 2016.

passive protection against them) and before taking off for each mission (to prepare properly the mission from the point of view of trajectory to follow, of flight profile, procedures, techniques and tactics applied etc.).

The risks and air defence threats to helicopters

“First aid” medical teams often became victims themselves while trying to save or treat wounded comrades in the battle and it appears to happen since the beginning of armed conflict.

In terms of contemporary multidimensional confrontation area during the missions, the evacuation teams can face asymmetric threats and fights between armed groups which take place on large tracts of land. Precisely due to the ability of the aircraft taking off and landing vertically to provide opportunities to escape and fast transport by high speed travel over land kneaded and the need to ensure minimum requirements regarding the landing terrain, those are used for the execution of medical evacuation to and from destinations which for other types of machinery are virtually inaccessible and with speeds that satisfy the demands of the current celerity action types.

The key element in planning an aero-medical evacuation mission in the area is represented by the risks and threats.

The main risks to flight safety or to completion of the missions encountered during the execution of the aero-medical evacuation missions in the forward area are:

- Reduced visibility flight due to phenomena such as Brown-Out (dust cloud), White-Out (cloud of snow), reduced residual light or excessive light intensity, high degree of obstacle clearance, heavy precipitation, obscured weather phenomena (hydrometeors, fog, snow or lithometeors, dust, haze, industrial smoke, volcanic ash), water droplets entrained in the ground, form or shell of the land;
- Flight in particular climatic conditions: corrosive atmosphere (tropical-wet), the atmosphere filled with dust and sand with an abrasive effect on the elements which can be found in relative motion with the air;
- Extreme temperatures (high or low), affecting the performance of the aircraft and crew;
- Errors of data navigation tools or lack of navigation data;
- Lack of related ground equipment corresponding to the precision navigation systems;
- Loss of radio connection with the base or other aircrafts participating in the mission;
- Unknown position of other aircrafts participating in the mission.

The spectrum of threats is represented by the aerial or terrestrial impactor components and/or research or, more specifically, the ability of the opponent to detect, identify and engage the aerial platform through which runs air evacuation.

If the elements of striking from the air are represented by complex systems being in the responsibility field of the aircrafts participant in the execution of the escort missions for direct protection from airborne platforms destined for the aero-medical evacuation in the forward area, the types of ground threats will be further analyzed in terms of the specific of the helicopter, which can be divided into two main categories: guided and unguided weapon systems.

Guided weapon systems used against helicopters can also be divided: those that use radars to be assisted in the target acquisition, those that use infrared radiation for the same reason and those that use a combination of the first two.

Radar guided weapon systems currently do not offer solutions for managing the explosive charge once launched, this capability is specific for the missile systems. Absolutely all weapon systems guided by radar are very difficult to mask out and to operate on the battlefield as they are generally characterized by large dimensions and are emitting strong electromagnetic radiation and can thus be detected and assigned as targets once they are released.

Weapon systems guided through infrared radiation were commonly used as systems under the personal equipment of the military personnel (MANPED), independent of any power supply/insurance, small size and easy to mask out making them almost impossible to detect before release. These systems have been specially developed and adapted to counter the helicopter during combat. Their range varies greatly, but most of them are capable to hit helicopters almost their entire flight envelope, excepting the low altitude flight.

The unguided weapon systems require an operator trained to discover, track, manually launch and conduct fire on the target/helicopter. In this category fall the weapons that range from assault rifles to elements of high caliber anti-aircraft artillery, and also unguided missiles and guided rockets used unaided. These systems can be very difficult to detect before launching but because of not being equipped with guidance systems, the probability of hitting is low.

The worst case scenario for a helicopter being in a tactical frame is meeting a mixed anti-aircraft system consisting of guided and unguided weapons.

As weapons systems directed have strike power and accuracy very high and because they are more effective if used against targets exposed, at great height, it forces helicopters to evolve at low heights, placing them in the engagement envelope for the unguided weapons systems.

However, small arms, machine guns and unguided projectile launchers are considered to have a much smaller hitting and destruction capability compared to systems specifically designed for air defense, the character of the ubiquity of the latter provides more opportunities for the personnel armed with these weapons to launch them against helicopters.

Helicopters use a wide variety of techniques, tactics, procedures and equipment to counter these types of threats, but so far there has not been proven that it can guarantee protection against them.

The flight at low heights implies grazing flight, below 50 meters, to avoid the discovery and the attack from systems specially designed for targets evolving to higher heights. Without such systems, helicopters can perform to heights of 500 meters above the ground level and avoid being hit of the majority of the small arms.

The helicopters may also use the maneuver flight procedure in order to diminish the threat of weapons systems. As threats have grown so much in recent years, they are already able to counter this type of procedure. Moreover, using patient transport given the context of using such procedures can have irreversible effects on their health.

Some helicopters have ballistic protection possibilities through the installation of armor, but they are often limited to the protection of the crew and the construction parts of the helicopter that are considered vital to the functioning of the helicopter. Besides, they greatly increase the weight of the helicopter and that it decreases the number of the patients and medical team members, the ballistic protection systems have the disadvantage of providing only a certain degree of protection against weapons with less firepower.

There are also more advanced methods or sophisticated for active protection against threats guided by radar or by infrared using warning systems and countermeasures as chaff and flare.

As a conclusion, no matter how many or how developed the protection systems used by the high-end helicopters and no matter how significant is their contribution on the

battlefield, taking into consideration the practical use of them is close to the ground, their vulnerability nature cannot be eliminated entirely.

Future challenges

As noted above, the chances of survival for a soldier wounded on the battlefield derive from the evacuation time parameter. Although it is widely accepted that, at this time, the evacuation time parameter is at the highest value since the need for medical evacuation appeared, the efforts to improve it should not be abandoned.

Advanced aero-medical evacuation missions can be executed, in most cases, only with aircrafts destined for the transportation of patients which have possibilities of vertical takeoff and landing. Therefore, this parameter can be analyzed from the following technical and tactic characteristics point of view, elements that may influence its value:

- Applicable domaine of the aircraft;
- Availability degree of the aircraft.

Using the ability of helicopters to perform aero-medical evacuation mission in the forward area, if they obtain an extension of the use and improvement availability of the aircraft owned, the armed forces can provide commanders enhanced capabilities to initiate, lead and support combat operations going over difficulties such as rough ground regardless of the tactical time.

The main elements of the field of use, which may influence the intervention time parameter for improving freedom of action, depending on the characteristics of the land surface, natural and artificial obstacles, operating conditions (day or night, weather, DVE, etc.) and tactical situation are the following:

- Flying speed. The increased flight speed reduces action time from the takeoff (if operated from the ground level) or starting with the moment of receiving the evacuation request (if it's aerial operated) until the intervention;
- The action range or flight autonomy enables the control to/from a remote-area without planning forward area refueling points (FaRPs) or without transferring the wounded person to another aircraft (the two procedures being time-consuming). An improved flight autonomy also allows the general conditions of utilization of the call to action, "while in the air", through possibilities to extend the residence time in the waiting area and/or organizing staging areas at much greater distance from the base location;
- Operating throughout the night, regardless of lighting level allows immediate action without the delay necessary to improve the level of lighting required using residual light (moon or stars lit) or direct light (sunrise);
- Operating in the full spectrum of threats (regardless of their level of intensity, low, medium or high). Reducing limitations in relation to land threats which attack by direct fire, presenting a small footprint, discovering threats by own means and countering them remotely when they are outside the range of their weapons;
- Ability to face phenomena that suddenly degrade the visibility (DVE/Degraded Visual Environment) conditions encountered during the procedure for landing on unprepared terrain may be delayed considerably (e.g. by missing landing and repeat procedure when the phenomena "Brown-Out" or "White-Out" appear) or even cancel the landing (dense fog);
- High speed execution and response to the tactical situation using systems that relieve the crew from cabin tasks giving them the opportunity to focus on the mission, knowing the correct tactical situation in real-time, executing flight at low heights, during the day and night,

regardless of the visibility conditions using the land to mask and to avoid detection by the enemy;

- Freedom of choosing (in advance) the execution zone and/or landing ground, flight and navigational options that allow the execution of the landing procedure in a short time as soon as the location of the wounded was identified;

- Aircraft availability is a key factor for ensuring appropriate means of escape routes for the wounded. Beyond the common issues on technical availability, and those which apply in peacetime, items such operation in tropical moist areas, salty environments, dusty areas etc., affect the operational status of the main components in aircraft construction (engines, transmissions, main rotor blades and/or the tail rotor etc.) generating constraints on freedom of action of the commanders due to no possibility to ensure combat missions (such as in depth operation) using means for medical evacuation and with implications on troop morale and will to fight.

Dedicated departments of the armed forces pay a continuous attention to these issues by developing operational requirements for specialized aviation industry products. But so far it seems that for some issues mentioned were found tracks to follow in order to find the most appropriate solutions while for others were not.

It can be forecasted developments in the area of systems for combating the occurrence of phenomena that suddenly degrade visibility in the field of vision of systems which provide real-time tactical situational awareness, of protection systems against high-end weapons, there has been developed systems used to avoid collision with the ground, systems used for obstacles detection and avoidance, there are expectations from the flight field that allows piloting during direct visibility to the ground when running at low height or low flying in low visibility conditions etc.

There are however long expected evolutionary steps for which the aviation industry is not yet ready to give solutions to. We include here the significant increase of the helicopter performance in the meaning as increasing helicopter flight speed or autonomy. Regularities which the helicopter was thought and designed to operate for do not allow easy developments in this direction (or perhaps impossible to accomplish). For example, in the last 6 decades the helicopter's cruising speed has been improved by only less than 15% (on average, taking into account the flight performance of the helicopters from the PUMA family: SA 330, AS 332 C1, AS 332L1, EC 225, AS 532 SC, AS 532 AL și EC 725). 15% of the actual time of intervention reached today (below 30 minutes) means less than 5 minutes. It requires doubling or even tripling the decrease of the time of intervention in order to achieve significant improvements.

Strictly speaking from the current endowment, is recognized by all states (proved by the provisos of their doctrines) that, in case of a large-scale conflict, not everyone can provide aero-medical evacuation with the advanced medical support at an intensive level care during transportation which in these circumstances will lead us back to medical military capabilities of transportation summary equipped or even without equipment nor necessary personnel to ensure medical support during patients medical transportation.

CONCLUSIONS

In terms of providing medical care during air transportation of the wounded during military actions, any efforts paid to improving aero-medical evacuation parameters will be important parameters for successful use of aerial platforms in order to save military personnel's lives. Despite doctrinal and technical developments there are still many gaps related either to the detailed knowledge of ways of using helicopters or understanding the

ways of manifestation of risks and threats, whether related to interoperability. All these unresolved issues are still actual, fact which highlights the need for continuing paying attention to them. The intended use of helicopters can and should be expanded in order to provide to the commanders more freedom during planning process.

Although the US military has done extensively pioneering in the field of evacuation by helicopter during the Vietnam War and evacuated tens of thousands of patients in the current conflicts over the last decade, we cannot say that there is significant research in the field of evacuation by helicopter in combat conditions.

The context in which it is necessary to deepen the analyzes on the importance of the role of helicopters in providing medical support during operations, in terms of history, present and prospects in the field, is one in which there are reasons to believe that the efforts of medical support should be channeled in order to achieve a seamless integration of the patient in a transport system (evacuation) that can be easily adapted/converted from primary destination (classic air transport) to a versatile aero-medical evacuation system, ubiquitous and increasingly faster.

It remains to be seen whether the helicopters are only a stage in the evolution of medical insurance systems during operations or the medical insurance will be temporarily or permanently conditioned by providing evacuation of the wounded from the battlefield using helicopters.

Evolution history of medical evacuation proves that providing medical care to patients can occur during all forms of transport, wherever they are: air, land or sea. There is a high possibility that the same item of equipment to be exposed to these environments in a transport cycle, which can significantly reduce the time to ensure advanced medical intervention.

In the context of the global arms transfers has grown steadily in recent years to a level that exceeds the maximum volume traded during the Cold War (between 2012-2016 were sold more weapons than in any other period of 5 years, starting with 1990) and the aviation industry profile achievements seem to be rather preoccupied to respond to current specific theater needs and not the future ones (10-15 years), decisions to upgrade or to replace helicopter fleets must take into account all these realities; the area of use, availability and performance being key factors in the integration of forward aero-medical evacuation in the operations theater architecture.

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ARGUMENTS CONCERNING THE TRANSPOSITION OF INTERNATIONAL ACCOUNTING STANDARDS IN THE PUBLIC SECTOR (IPSAS) IN ACCOUNTING LEGISLATION PRESENT IN ROMANIA BY NATIONAL NORMATIVES, THE MANNER OF ACCOUNTING FOR ASSETS NON-CURRENT, INVENTORIES AND EXPENSES OF HUMAN RESOURCES FOR PUBLIC ENTITIES AND COMPARATIVE PRIVATE SECTOR

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Abstract: *The paper deals with three issues of critical importance:*

1) Fundamental issues resulting from the International Accounting Standards for Public Sector, in the private sector non-current assets on the place, inventory and human resources expenses in content and format of financial statements;

2) Regulations and approaches in the literature on non-current assets accounting, inventory and human resources expenditure for the comparative look over public entities and the private sector;

3) Conclusions and proposals.

Keywords: *tangible; stocks; amortization; fair value; net realizable value.*

Fundamental aspects resulting from the International Accounting Standards for Public Sector, in the private sector non-current assets on the place, inventory and human resources expenses in content and format of financial statements

From the beginning, we refer to the main provisions of IPSAS 1, Presentation of financial statements at non-current assets, inventories and spending on human resources in content and format of the financial statements¹.

Financial statements are a structured representation of the financial position and financial performance of an entity.

The objectives of financial statements with general purpose are to provide information about the financial position, financial performance and cash flows of an entity that is useful to a wide range of users in making and evaluating decisions about the allocation of resources. The objectives of financial reporting with general purpose in the public sector should be to offer useful information and demonstrating accountability of decision-making entity for the resources entrusted to it.

Financial statements with general purpose can also have a predictive or prospective role, providing information useful in predicting the level of resources needed to continue the

¹ IPSAS 1 – Prezentarea situațiilor financiare, publicat în Consiliul pentru Standarde Internaționale de Contabilitate pentru Sectorul Public, Manualul de Norme Internaționale de Contabilitate pentru Sectorul Public, Ediția 2013, Vol.1, Tradus și republicat de Corpul Experților Contabili și Contabililor Autorizați din România, București, 2014, pp. 79-125.

activities, resources that could be generated by continuing operations and the risks and uncertainties associated.

Financial reporting may provide users: a) indicating whether resources were obtained and used legally in accordance with the adopted budget; b) indicating whether resources were obtained and used in accordance with legal and contractual provisions, including financial limits established by appropriate legislative authorities.

To achieve these objectives, financial statements provide information about: a) assets; b) debt; c) net assets / equity; d) revenue; e) expenses; f) other changes in net assets / equity; g) cash flows.

Responsibility for the preparation and presentation of financial statements varies across jurisdictions and between jurisdictions. In addition, a jurisdiction may establish a distinction between the person responsible for the financial statements and the one responsible for approving or presenting the financial statements. Examples of people or positions that may be responsible for the financial statements of individual entities (such as government departments or their equivalents) include the person who manages the entity (director or permanent Executive Director) and its Director Central Financial (or official financial as controller or chief accountant).

Responsibility for the consolidated financial statements of the government as a whole is typically divided between the central financial agency director (or chief financial such as the controller or chief accountant) and Minister of Finance (or its equivalent).

Components of financial statements. A complete set of financial statements include: a) a statement of financial position; b) a statement of financial performance; c) a statement of changes in net assets / equity; d) a statement of cash flows; e) when the entity makes public the approved budget, a comparison of budget and actual amounts either as a supplementary individual financial statement or as a budget column in the financial statements; f) notes, comprising a summary of significant accounting policies and other explanatory notes.

Statement of financial position may also be called the balance sheet or statement of assets and liabilities.

The situation can be called financial performance and the income statement, income statement, statement of operating activity or situation of profit and loss.

Entities are encouraged to submit additional information in the notes to the financial statements, to assist users in assessing the performance of the entity and its asset management and making decisions on resource allocation and evaluation.

This additional information may include details on the achievements and results of the entity in the form of: a) the performance indicators; b) statements of work performance; c) analysis software; d) other management reports on the achievements of the entity during the reporting period.

Entities are also encouraged to disclose information on compliance with legislation, regulations and other rules imposed from outside.

The financial statements must present fairly the financial position, financial performance and cash flows of an entity.

Statement of financial position seeks to achieve distinction active current/or current liability/long term. An entity shall present current assets and assets and current liabilities and long term as classifications distinct when actual financial position in accordance with the express provisions of that standard, unless a presentation based on liquidity provides information that is reliable and more relevant.

In the balance sheet reflects the financial position of non-current assets are found, from which non-current assets occupies a very important body. These types of assets covered by IPSAS 17-Property, plant².

The following are some new elements in the above standard.

The objective of this standard is to prescribe the accounting treatment for property, plant and equipment so that users of financial statements can discern information about an entity's investment in its property, as well as changes in such investment.

The principal issues in accounting for property, plant and equipment are as follows: a) recognition of assets; b) the determination of their carrying amounts; c) depreciation expense and impairment losses to be recognized in relation to them.

In terms of scope, an entity that prepares and presents financial statements under accounting on an accrual basis shall apply this standard in accounting for property, plant and equipment unless: a) adopted a different accounting treatment under another IPSAS; b) it is active heritage. This Standard (IPSAS-17) applies to all public sector entities outside the state economic entities (applying IFRS issued by the IASB).

This standard applies to property, plant and equipment, including: a) specialized military equipment; b) infrastructure assets; c) Service Concession commitments after initial recognition and measurement in accordance with IPSAS 32 - Service Concession Commitments: grantors.

This standard does not apply: a) biological assets related to agricultural activity (see IPSAS 27, Agriculture); b) mineral rights and mineral reserves such as oil, natural gas and similar non-renewable resources.

Obvious, in this standard are a series presented a series of clarifications related to: heritage assets; infrastructure assets; initial costs; future costs; evaluation of recognition; cost elements; cost assessment; other issues.

From this standardized we want to highlight the way how some specific terms related to these assets are defined: book value; class of property, plant and equipment; depreciable amount; amortization; tangible; the recoverable amount; residual value of an asset; the useful life.

Book value is the amount at which an asset is recognized after deducting any accumulated depreciation and accumulated impairment losses.

Class of property is a grouping of assets of similar nature or function within the entity's operations, which is presented as a unique view to presenting information in the financial statements.

The depreciable amount is the cost of an asset or other amount substituted for cost, less its residual value.

Depreciation is the systematic allocation of the depreciable amount of an asset over its useful life. In connection with the amortization of these types of assets, this standard specifies that can be used for variety of depreciation methods systematic allocation of the depreciable amount of an asset over its remaining useful life.

These methods include linear, digressive amortization method and the unit of production method. Straight-line depreciation results in a constant charge over the useful life if the asset's residual value does not change. The diminishing balance method results in a decreasing charge over the useful life. Units of production method result in a charge based on the expected use or output.

² IPSAS 17-IMOBILIZARI CORPORALE, publicat în lucrarea Consiliul pentru Standarde Internaționale de Contabilitate pentru Sectorul Public, Manualul de Norme Internaționale de Contabilitate pentru Sectorul Public, Ediția 2013, Vol.1, Tradus și republicat de Corpul Experților Contabili și Contabililor Autorizați din România, București, 2014, pp. 555-585.

The entity selects the method that most closely reflects the expected pattern of consumption of future economic benefits or service potential embodied in the asset. That method is applied consistently from period to period, unless there is a change in the expected pattern of consumption of those future economic benefits or service potential.

Tangible assets are tangible items that: a) are held for use in the production or supply of goods or services, for rental to others or for administrative purposes; b) are expected to be used over several reporting periods.

Recoverable amount is the higher of fair value of an asset generating cash less costs to sell and value in use.

The residual value of an asset is the estimated amount that would obtain an entity currently disposing the asset, after deducting the estimated costs of disposal, if the asset were already of the age and condition expected at the end of its useful life.

Useful life is: a) the period over which an asset is expected to be available for use by an entity; b) the number of production units or similar units that an entity expects to derive from the asset.

Terms defined in IPSAS 17 are used with the same meaning as in standards for companies (IFRS) and in particular we refer to homologous standard (IAS 16 Property, plant and equipment³).

Obviously there are many more issues of this standard would be worth exploring, but for reasons of space we do not dwell on them.

In the balance sheet reflects the financial position and current assets are found, among which occupies a very important stocks.

These types of assets covered by IPSAS 12 Inventories⁴.

The following are some new elements in the above standard.

A primary issue in accounting for inventories is the amount of cost to be recognized as an asset and carried forward until the related revenues are recognized.

An entity that prepares and presents financial statements under accounting on an accrual basis shall apply this standard in accounting for all inventories except for the following assets: a) work in progress arising under construction contracts, including contracts for services directly related they (as IPSAS 11 - construction contracts); b) financial instruments (see IPSAS 28 - Financial Instruments: Presentation and IPSAS 29 - Financial Instruments: Recognition and Measurement); c) biological assets related to agricultural activity and production at harvest (see IPSAS 27 - Agriculture); d) ongoing services provided free or for a nominal consideration directly as parts of the beneficiaries.

This standard does not apply to the measurement of inventories held by: a) producers of agricultural and forest products, agricultural produce after harvest, and minerals and mineral products, to the extent that they are measured at net realizable value in accordance with well-established practices in those sectors; b) broker-traders who measure their stock market inventories at fair value less costs to sell.

IPSAS 12 applies to all public sector entities outside the state economic entities (applying IFRS issued by the IASB).

In the following we refer to the most important terms are used in this standard with the meanings specified for each term: the current replacement cost; stocks; net realizable value; fair value.

³ IFRS 2013, Editura Corpul Experților Contabili și Contabililor Autorizați din România, București, 2013, pp. B1187-B1199.

⁴ IPSAS 12-STOCURI , publicat in lucrarea Consiliul pentru Standarde Internaționale de Contabilitate pentru Sectorul Public, Manualul de Norme Internaționale de Contabilitate pentru Sectorul Public, Ediția 2013, Vol.1, Tradus și republicat de Corpul Experților Contabili și Contabililor Autorizați din România, București, 2014, pp. 385-401.

Current replacement cost is the cost the entity would incur to acquire the asset at the reporting date.

Inventories are assets that can include the following forms: a) in the form of materials or supplies that will be used during the production process; b) in the form of materials or supplies to be used or distributed service delivery process; c) held for sale or distribution in the ordinary course of business; d) during the production process for sale or distribution.

Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale, exchange or distribution. Net realizable value for inventories may not equal fair value less costs to sell.

Fair value reflects the amount for which the same inventory could be exchanged between willing buyers and sellers' market and knowingly.

Inventories encompass goods purchased and held for resale including, for example, merchandise purchased by an entity and held for resale, or land and other property held for sale.

Of inventory and finished goods produced or production underway at the establishment.

Inventories include the following goods: a) materials and supplies to be used in the production process; b) property acquired or produced by the entity that will be distributed to others for free or for a nominal price.

In the public sector, stocks may include: a) ammunition; b) consumable supplies; c) maintenance materials; d) spare parts for other tangible than those treated about tangible standards; e) strategic supplies (for example energy reserves); f) unissued stock of money; g) postal stocks held for sale (for example, stamps); h) products under development, including: h1) materials for educational courses / training; h2) customer service (for example, auditing), where those services are sold at normal market prices; h3) land / property held for sale.

Obvious, in this standard are a number of clarifications related to: acquisition costs; costs of conversion of inventories in progress in inventories of finished; administration allocation of fixed and variable production costs of conversion; selling costs; the amount of inventories recognized as an expense of the period; etc.

When a government maintains various strategic reserves, such as energy reserves (for example oil), to be used in an emergency or other situations (for example, natural disasters or other emergencies civil defence), they are recognized as stocks within the meaning of this standard and are treated as such.

Inventories are valued at the lower of cost and net realizable value, except where an express provision applies standard.

In related stocks, financial statements must disclose the following information: a) the accounting policies adopted in measuring inventories, including the cost formula used; b) the total carrying amount of inventories and the carrying amount in classifications appropriate to the entity; c) the carrying amount of inventories carried at fair value less costs to sell; d) the amount of inventories recognized as an expense during the period; e) any reduction in the amount of inventories recognized as an expense in the period in question; f) the amount of any reversal of a reduction recognized in the statement of financial performance in the period; g) the circumstances or events that led to the reversal of a stock; h) the carrying amount of inventories pledged as security for liabilities.

IPSAS 12 - Stocks defined terms are used with the same meaning as in the similar standard called IFRS ISA 2 - Inventories⁵ and are reproduced in the Glossary of terms defined published separately.

⁵ IAS 2-Stocuri, publicat în IFRS 2013, Editura Corpul Experților Contabili și Contabililor Autorizați din România, București, 2013, pp. A579-A593.

Obviously there are many more issues of this standard would be worth exploring, but for reasons of space we do not dwell on them.

Expenses for human resources are a component part of expenditure is reflected in the statement of financial performance of a public entity.

For this we will review the main elements of financial performance situation these entities under IPSAS 1.

All items of income and expense recognized in a period are included in surplus or deficit, unless otherwise provided in an IPSAS.

Normally, all items of income and expense recognized in a period are included in surplus or deficit. This includes the effects of changes in accounting estimates. However, there may be instances where certain items may be excluded from surplus or deficit for the current period.

An entity shall disclose either when actual financial performance or in the notes, an analysis of expenses using a classification based on either the nature of expenses or their function within the entity, whichever provides more reliable and more relevant.

Expenses are classified to highlight the costs and cost reimbursements of special programs, the activities or other relevant segments of the reporting entity. This analysis is provided in one of two ways.

The first form of analysis is the nature of expense method. Expenses are aggregated in the statement of financial performance according to their nature (for example: depreciation, purchases of materials, transport costs, employee benefits and advertising costs), and are not reallocated among various functions within the entity.

This method may be simple to apply because there is no need allocation of expenditure on functional classifications. It provides the following example of a classification using the allocation of expenses by nature: Revenue X Cost of employee benefits expense amortization and impairment X Other expenses X Total expenses (X) Surplus X.

The second form of analysis is the method of classification of expense, according to the program or purpose for which they were made. This method can provide more relevant information to users than the classification of expenses by nature, but allocating costs to functions may require arbitrary allocations and involve considerably judgment.

It provides the following example of a classification using expense method: Revenue X Expenses: Health expenses (X) Education expenses (X) Other expenses (X) Surplus X.

Entities classifying expenses by function shall disclose additional information on the nature of expenses, including depreciation and impairment charges and employee benefits expense.

The choice between expense and the allocation of expenses by nature method depends on both historical factors, as well as the regulatory and nature of the entity. Both methods indicate those costs that might vary, directly or indirectly, depending on the results of the entity and carries both advantages and disadvantages.

However, because information on the nature of expenses is useful in predicting future cash flows, additional disclosure is required when used in bands expense method.

The phrase "employee benefits" has the same meaning as in IPSAS 25, Employee Benefits. When an entity provides dividends or distributions similar to its owners and has share capital, shall disclose, either in the statement of financial performance or the statement of changes in net assets / equity or in the notes, the amount of dividends or distributions similar recognized as distributions to owners during the period and the related amount per share⁶.

⁶ IPSAS 1-Prezentarea situațiilor financiare, publicat în Consiliul pentru Standarde Internaționale de Contabilitate pentru Sectorul Public, Manualul de Norme Internaționale de Contabilitate pentru Sectorul Public, Ediția 2013, Vol.1, Tradus și republicat de Corpul Experților Contabili și Contabililor Autorizați din România, București, 2014, pp. 108-111.

In conclusion spending on human resources, higher or lower in different public entities will influence inversely surplus or deficit for the period (expenses HR large generates decreasing surplus or development or increase the deficit period and conversely, expenses human resources Small enlarges surplus or deficit avoiding or reducing the period).

Approaches in regulations and accounting literature related to non-current assets, inventory and human resources costs for public entities and the private sector on comparative

From the beginning we will present the defining elements related to the takeover legislation specific accounting of public institutions in our country⁷ IAPSs provisions relating to tangible assets (non-current tangible assets referred to).

We will review successively the most important categories of non-current tangible assets: land (account 2111) and setting the land (account 2112); construction; technical facilities, vehicles, animals and plantations; advances to suppliers of fixed assets (account 232) and tangible fixed assets in progress; Mineral resources located throughout the country, in the basement of the continental shelf of the country and in Romania's economic zone in the Black Sea, separated according to international law principles and regulations of international conventions to which Romania is a party; advances to suppliers of fixed assets (account 232) and tangible fixed assets in progress.

For reasons of space we refer to accounting land, construction and technical installations, vehicles, animals and plantations.

Keep separate accounting for land: land (account 2111) and setting the land (account 2112). In cost accounting, land can be highlighted the following groups: agricultural land, forestry land without construction, land deposits, land with buildings and others. Land facilities include works such as connection to the power supply system, access works, fences and the like. By law, land is not depreciated, but land arrangements are amortized over a period of 10 years.

Construction is highlighted by groups, subgroups, classes and subclasses, according to the Catalogue of the classification and the normal useful life of fixed assets, approved by Government Decision⁸ (account 212).

Technical facilities, vehicles, animals and plantations stand out in groups, subgroups, classes and subclasses, according to the aforementioned catalogue (account 213).

A tangible fixed asset must be presented in the balance sheet at cost, less accumulated value adjustments. Value adjustments include all adjustments to take account of reductions in the values of individual assets established at the balance sheet date whether that reduction is final or not.

Value adjustments are permanent adjustments, also called depreciation and / or interim adjustments referred to as impairment adjustments, depending on whether permanent or temporary impairment of fixed assets.

The depreciable amount represents the book value of tangible fixed assets to be recorded systematically over its useful life.

⁷ OMFP nr. 1.917/2005 pentru aprobarea Normelor metodologice privind organizarea și conducerea contabilității instituțiilor publice, Planul de conturi pentru instituțiile publice și instrucțiunile de aplicare a acestuia, publicat în Monitorul Oficial al României, Partea I, nr. 1.186 și 1.186 bis din 29 decembrie 2005, pp. 34-39.

⁸ Hotărârea Guvernului nr. 2.139/30.11.2004, publicată în Monitorul Oficial al României, Partea I, nr.46/13.01.2005.

Public institutions depreciate tangible fixed assets using straight-line method (account 281). Depreciation is recorded monthly, starting next month commissioning or acceptance, as appropriate, of the asset.

Annual depreciation is calculated by applying the rate of amortization (CA) to the value of the tangible and intangible fixed assets. The depreciation (CA) for tangible fixed assets is calculated as the percentage ratio between the 100 and the normal functioning of the catalog of fixed assets ($CA = 100 / \text{the normal functioning}$). For tangible fixed assets entered the patrimony of public institutions that were not fully depreciated, the normal functioning remainder is provided in the entry documents or duration determined by the Commission, where it is not known since commissioning.

Investments in tangible fixed assets, for example, modernizations, repairs, rehabilitation, consolidation, etc., which increase the value of their input be amortized over the remaining estimated either by increasing the normal life span by 20%. If investments were made after the expiry of that term, it introduces a new normal life span by a technical committee, with the approval of the budget, but not more than 20% of the normal initial operation.

Normal operating terms approved by Government decision may correct upwards or reducing them by 20%, with the approval of the budget.

If tangible fixed assets acquired with the normal period of use expired, establishes a new term normal operation by a technical committee, with the approval of the budget, but not more than 20% of the normal initial operation. If fixed assets for which no data identifying the normal functioning consumed, it is not known since commissioning, the normal lifecycle of retrieving the input value is determined by a technical committee, with the approval of credits.

Not depreciated non-current tangible assets belonging to the public domain. Tangible fixed assets owned by the public institutions are amortized over a normal life span of a beach covered in years (minimum and maximum duration), with the possibility of choosing the number of years of depreciation in these times. Thus established, the normal operation of the fixed asset remains unchanged until the recovery of the value of its input.

Goods in the nature of weapons and combat techniques, as well as in conservation and reserve mobilization is not depreciated, by law, will be defined by their own rules by public institutions that have heritage (Ministry of Defence, Ministry of Administration and Interior, the Romanian Intelligence Service, Protection and Guard Service, the Special Telecommunications Service, other institutions holding such assets).

All the more extensive and detailed provisions are stipulated in Government Ordinance no. 81/2003⁹ on revaluation and depreciation of fixed assets owned by the public institutions, successively amended to OMEF no. 3471 of 25 November 2008 approving the Methodological Norms on the reassessment and amortization of fixed assets owned by the public institutions¹⁰.

Revaluation of fixed assets is made at fair value and shall be based on methodological norms issued by Ministry of Finance¹¹.

Points still some aspects of the above rule defining the basement, tied review these public goods.

⁹ *Monitorul Oficial al României*, Partea I, nr.624 din 31.08.2003.

¹⁰ *Monitorul Oficial al României*, Partea I, nr. 835 din 11 decembrie 2008.

¹¹ *Ordonanța Guvernului nr. 81/2003* privind reevaluarea și amortizarea activelor fixe aflate în patrimoniul instituțiilor publice, publicată în *Monitorul Oficial al României*, Partea I, nr.624 din 31.08.2003 modificată succesiv până la OMEF nr. 3471 din 25 noiembrie 2008 pentru aprobarea Normelor metodologice privind reevaluarea și amortizarea activelor fixe corporale aflate în patrimoniul instituțiilor publice, publicat în *Monitorul Oficial al României*, Partea I, nr. 835 din 11 decembrie 2008

By action of revaluation of fixed assets existing public institutions updates the heritage value of that property items in the financial statements of the year was made the review.

Revaluation of fixed assets is carried out with the purpose of determining their fair value at the balance sheet date, taking into account inflation, value of the property, its condition and the market price when the carrying amount differs significantly from fair value.

Fair value is determined based on an evaluation conducted usually evaluators or authorized by a commission appointed by the Head of the public, according to legal regulations.

There are revalued following types of assets: a) tangible fixed assets which entered the patrimony of public institutions during the reassessment is carried out and were recorded at cost of acquisition, production, or fair value, as applicable; b) tangible fixed assets revaluation date that have expired during normal operation; c) Tangible fixed assets in conservation and mobilization reserves, which are recorded in the accounts as tangible fixed assets; d) tangible fixed assets for which the documents, but have not obtained legal approvals shutdown, which have not been dismantled, demolished or dismantled; e) tangible fixed assets in progress.

Revaluation of tangible fixed assets are subject to public domain of the State or territorial administrative units, data administration autonomous bodies which, according to the express provision of the Annex to the Government Decision no. 1553/2003¹² on the revaluation of tangible and setting the input value of fixed assets, as amended, have not been revalued.

Tangible fixed assets belonging to the public domain or administrative-territorial units, data administration autonomous bodies which, according to the express provisions of Law no. 259/2007¹³ amending and supplementing the Law on accounting no. 82/1991, registered in off-balance account, to be inventoried and recorded in the accounts of public authorities, other bodies of public administration and local or autonomous public institutions that have coordination or under their authority, as the case based on the handover protocol.

The results of revaluation are recorded in the books in a specific account (account 105).

Directors of public institutions to perform their duties tertiary authorizing officer, the retirement of tangible fixed assets, intangible and under will be made with the approval of the principal or secondary credit, as appropriate, depending on subordination.

The regulation to which we refer are detailed and leasing issues in general, and in particular financial leasing assets received as donations, sponsorships or free of charge, on which, for reasons of space, we will not cover.

A very important moment for finding factual situation of fixed assets existing in the management of public institutions is an inventory of assets, equity and debt, operation being carried out at the end of each calendar year, the laws in force¹⁴, during which recourse where appropriate and assessment and reassessment of such assets or their value adjustment, depending on the practical and legal requirements in this regard.

Below we present some more specific aspects of the literature in the field. One of these works is the one that is authored by M. Criveanu¹⁵, from which we extract a few aspects of the forms by which to organize the records of fixed assets.

¹² *Monitorul Oficial al României*, Partea I, nr. 21 din 12 ianuarie 2004.

¹³ *Monitorul Oficial al României*, Partea I, nr.506 din 27.07.2007.

¹⁴ OMFP nr. 2861 din 9 octombrie 2009 pentru aprobarea Normelor privind organizarea și efectuarea inventarierii elementelor de natura activelor, datoriilor și capitalurilor proprii, publicat în *Monitorul Oficial al României*, Partea I, nr. 704 din 20 octombrie 2009.

¹⁵ Criveanu M., *Contabilitate publică*, Editura Universitaria, Craiova, 2007, pp. 103-119.

To organize analytical records of fixed assets using the following two forms: the Register of inventory numbers and asset fact sheet (which as format must comply with national regulations in force)¹⁶.

Register inventory numbers is kept at the financial accounting department of public institution and serves for numbering and registration identification data of fixed assets. Used as a document of assignment of inventory numbers in tangible fixed assets (by writing directly on the object or by attaching a plate with number assigned), and the document filing the budget units that have organized their own accounts (schools, homes cultural, kindergartens, veterinary districts, etc.).

Sheet asset serves as a document of analytical accounting of fixed assets in falling fixed asset data for each body part on: name and code, date of entry, the normal operating rule depreciation, etc.

Public institutions are required to disclose in accounting, separate accounts, tangible fixed assets and amounts resulting from the dismantling, recovery and decommissioning them. Disposal of fixed assets is made by a commission appointed by decision of the cassation which approved cutout. On the occasion of scrapping it will proceed to the dismantling of fixed assets and their recovery law.

In the following we glean some defining issues related to non-current tangible assets, in another work called Green Paper suggestive accounting of public institutions.

Tangible fixed assets are complex object or objects used as such and that meet two conditions: have an input value greater than the limit set by law (currently 2,500 lei) and the normal use period higher than 1 year.

Accounting recognition of tangible fixed assets is performed differently depending on their treatment, namely whether or not subject to amortization.

Tangible fixed assets are recognized in the accounts at cost, called book value, represented by the following measurement bases: acquisition cost for assets acquired for consideration at the time of transfer of ownership; production cost for assets under its own realized, when drawing up documents; fair value for the assets received free of charge.

Regarding temporary impairment of intangible fixed assets, it may be caused by the following cases: termination / near termination request or need for services provided by the asset, the asset will be unusable or to be paid; that a decision to stop the termination or completion of the asset before commissioning; his performance in service delivery is lower than expected; changes in technology or changes in regulations.

In a very interesting work¹⁷ is presented (as well as in every work of public accounting emerged in recent years) in more detail than others, the main accounting operations relating to tangible fixed assets, of which however will not cite reasons space, the most suggestive of them.

Compared to tangible assets regulating private entities, according to OMPF 1802/2014 approving the Accounting Regulations on individual annual financial statements and annual consolidated financial statements¹⁸, in contrast only public entities related to the accounting and financial reporting and tax these items active as the following: 1) the expenses resulting from amortization, depreciation and decommissioning of these assets does not result in tax result (as profit tax) to be taxed (as in the case of companies paying corporate tax) but the result sheet as patrimonial surplus or deficit, which is not subject to tax (if surplus

¹⁶ OMFP nr.2.634 privind documentele financiar-contabile, din 5 noiembrie 2015, publicat în Monitorul Oficial al României, Partea I, nr.910Bis din 09.12.2015.

¹⁷ Oncioiu Ionica, Oncioiu Florin Răzvan, Chiriță Sorin, Contabilitate publică, Institutul pentru Dezvoltarea Resurselor Umane, București, 2008, pp. 38-39.

¹⁸ *Monitorul Oficial al Romaniei*, Partea 1, Nr.963 din 30.12.2014.

asset); 2) for tangible fixed assets of public institutions using only linear depreciation or amortization is not calculated or (as with goods belonging to the public domain).

We refer to as the main issues arising from the national regulation in force related stocks¹⁹.

Inventories are current assets that meet the following conditions: a) are held to be sold in the ordinary course of business; b) under production for sale in the ordinary course of business; c) are in the form of raw materials and other supplies that will be used in its current activity of the institution, in manufacturing or services .

Within stocks include: raw materials, supplies, materials inventory objects, products, animals and birds, goods, packaging, work in progress and goods in custody for processing or on consignment from third parties. Also are included stocks of strategic raw materials and other stocks with particular importance for the national economy.

Of the many types of stocks, we will refer to those which have implications for the safety and defense of the country (state reserve, reserve mobilization, packaging state reserve and outreach).

State Reserve includes goods from state public property that is the purpose of intervening force to protect the population, economy and defence, in exceptional circumstances, natural disasters, epidemics, epizootics, industrial accidents or nuclear, social phenomena or economic, external conditions or in case of war (account 3041).

The mobilization reserve includes goods in state ownership (through Ministry of National Defense), namely: 1) industry: raw materials, semi-finished subassemblies and add-ons, equipment strictly specialized tools, devices, checkers; 2) in communication and transport: equipment rehabilitation and maintenance in running capacity transport and telecommunications needed to ensure the needs of forces national defence system; 3) health: material health pharmaceutical supplies, raw materials needed for the manufacture of pharmaceutical products, equipments, instruments, medical; 4) to trade: food and industrial necessary to ensure applications military units required locally mobilization (account 3042).

Packages state reserve and mobilization include packaging for goods that constitute the state reserve and mobilization, expressly mentioned in the order (account 305).

In the category of other stocks fall: ammunition and supplies for national defence, public order and national security, and other stocks specific to other public institutions (account 309).

Also this regulatory longer found and references to the following types of stocks: blanks; finished products; rejects; production in progress; assets seized or brought under the law, in private property of the state and the goods of this type in custody or on consignment from third parties; commodities; packaging.

Also this regulatory longer found and references to the following types of costs: the cost of inventories; cost of production and processing; standard cost; differences in price over the cost of acquisition or production; coefficient of distribution of price differences on the value of goods outgoing and inventories.

On leaving the management, stocks are assessed and accounted using one of three methods: a) the first-in-first-out (FIFO); b) weighted average cost method (CMP); c) the method last-in-first-out (LIFO);

a) Method "first in-first out" (FIFO) - by that method, the goods outgoing from inventory are valued at cost of acquisition or production of first entry (lot). As exhaustion

¹⁹ OMFP nr. 1.917/2005 pentru aprobarea Normelor metodologice privind organizarea și conducerea contabilității instituțiilor publice, Planul de conturi pentru instituțiile publice și instrucțiunile de aplicare a acestuia, publicat în Monitorul Oficial al României, Partea I, nr. 1.186 și 1.186 bis din 29 decembrie 2005, pp. 41-50.

consignment goods outgoing from inventory are valued at cost of acquisition or production of the lot next in chronological order.

b) Weighted average cost method (CMP) - involves calculating the cost of each element based on the weighted average cost similar items in stock at the beginning of the period and the cost of similar items purchased or produced during the period. Media can be calculated periodically or after each reception.

c) Method "last in-first out" (LIFO) - that method, the goods outgoing from inventory are valued at cost of acquisition or production of the last entry (lot). As exhaustion consignment goods outgoing from inventory are valued at cost of acquisition or production of the previous batch, in chronological order.

Also this regulatory longer found and references to the following types of problems: registration adjustments for impairment of inventories at year-end; determination of production in progress; inventory permanent; inventory intermittently; bookkeeping analytical assets based on the following methods: operational accounting, quantity-value, amount; decrease in accounts of damage which is not to blame a person; maximum perishable admitted; declassification and disposal of material goods.

Below we present some more specific issues related stocks, some papers in the field. One of these works is the one that is authored by M. Criveanu²⁰, from which we extract some aspects of the characteristics of stocks.

Inventories are part of current assets and, according to Romanian accounting regulations are characterized by the following features: a) owned to be sold in the ordinary course of business; b) is being produced for sale in the ordinary course of business; c) are in the form of raw materials and other supplies to be used in the production or provision of services.

In a very interesting work²¹ is presented (as well as in every work of public accounting emerged in recent years) in more detail than others, the main accounting operations on stocks, which however will not cite reasons of space, the most suggestive of them.

In the following we will mention a few defining aspects of another work called Green Paper suggestive accounting of public institutions.

Inventories are assets: held by the institution to be sold in the ordinary course of business evolution; ongoing production for sale in the ordinary course of business or as raw materials and other consumables to be used in the production or provision of services.

Stocks initially recognized at cost, called book value, represented by the following measurement bases: purchase cost for stocks purchased for consideration; cost of production for stocks of manufacturing assets acquired; fair value for the stock received for free.

At the end of the year, the public can register adjustments for impairment of inventories as a result of depreciation.

If the adjustment becomes partially or totally pointless because reasons that led to its reflection ceased to exist to a certain extent, then that adjustment should be reduced or canceled.

If there is impairment in addition to that which was initially recognized in the accounts, the impairment must be increased.

At balance sheet date, inventories are recognized at a value lower than can be achieved through their sale or use.

To this end, inventories would decline to net realizable value by recognizing impairment adjustments.

²⁰ Criveanu M., *Contabilitate publică*, Editura Universitaria, Craiova, 2007, pp. 155-163.

²¹ Oncioiu Ionica, Oncioiu Florin Răzvan, Chiriță Sorin, *Contabilitate publică*, Institutul pentru Dezvoltarea Resurselor Umane, București, 2008, pp. 42-44.

Compared with stocks in regulating private entities, according to OMPF 1802/2014 approving the Accounting Regulations on individual annual financial statements and annual consolidated financial statements²², in public entities only difference related to the accounting and financial reporting and tax assets of these elements would be that they, the costs resulting from putting their consumption or use should not cause a tax result (as profit tax) to be taxed (as in the case of companies paying corporate tax) but the result sheet as patrimonial surplus or deficit, which is not subject to tax (if surplus asset).

The final part of this second part of the communication we present some substantive issues related to the legislation in force²³ on the expenditure side, with a focus on human resources costs.

According accrual expenses reflect the cost of goods and services used to achieve public service or income, as applicable, as well as subsidies, transfers, social assistance, relating to a period of time.

Staff costs are part of the expenditure of the budgetary account and include: salaries in cash and in kind, bonuses, and contributions thereto, are recognized in the period in which the work was performed. Rights due and unpaid budget for the year, are also included in the staff costs of the exercise.

The main expenditure groups are spending on inventories, expenses work and services performed by third parties and expenses with other third party services expenses, other taxes, taxes and similar, personnel expenses, other operating expenses, financial expenses, other expenses financed from the budget, capital expenditures, depreciation and provisions and extraordinary expenses.

Personnel expenses include: 1) staff salaries (account 641); 2) salary entitlements in kind (account 642); 3) Insurance: employers' contributions to social security, unemployment insurance, health insurance, work accidents and occupational diseases, other expenses on insurance and social protection (account 645); 4) The benefits of delegation, detachment (account 646).

M. Criveanu specialist in the work to which I have referred²⁴, are set out in detail a number of issues relating to human resources costs.

Labour factor is the essential element in the conduct of any governmental entities. The remuneration of labour is the main way to reward work performed by staff.

Establishing pay system in state institutions is based on the level of education required for the performance in relation to those institutions category: education, health, national defense, administration, etc.

Staffing at public institutions shall be established by member of functions approved by the competent bodies. The salary is set by statutes approved by the government and / or administrative-territorial units corresponding manner of organization and financing of the public.

Salary (gross income) due staff consists of: base salary due to employees, bonuses, additions, allowances and other amounts (for management, indexation of wages to compensate for rising prices, indemnities for annual leave etc.), benefits in nature, other personal rights. In the category of settlements with staff longer include the amounts awarded as compensation for holidays and sickness, temporary disability, child care, death benefits and other benefits granted by the public institution.

²² Monitorul Oficial al României, Partea 1, Nr.963 din 30.12.2014.

²³ OMFP nr. 1.917/2005 pentru aprobarea Normelor metodologice privind organizarea și conducerea contabilității instituțiilor publice, Planul de conturi pentru instituțiile publice și instrucțiunile de aplicare a acestuia, publicat în Monitorul Oficial al României, Partea I, nr. 1.186 și 1.186 bis din 29 decembrie 2005, pp. 71-73.

²⁴ Criveanu M., *Contabilitate publică*, Editura Universitaria, Craiova, 2007, pp. 155-163.

Not included in the salary income a series of aid, rents, employee training costs and other expenses stipulated in the Fiscal Code.

Staff within public institutions can be placed either in the category of civil servants or contract staff category.

While taking into account personal tax and payroll tax. since 2005 (Order no. 86 from 28.01 / 2005²⁵ to regulate the time of payment of salaries to public institutions) the principal loan, public institutions and public services in their subordination to pay wages in a single installment monthly, between 5-15 of the current month to the previous month.

On the same line regulations are recalled two acts: Order no. 1639/2012²⁶ regarding the completion OMPF no.86 / 2005 for the settlement date payment of salaries to public institutions; Government Emergency Ordinance no. 99/2016²⁷ on certain measures for staff salaries paid from public funds, the extension of deadlines and fiscal measures.

It is noted that due to staff salaries in the public sector for work are calculated and paid monthly, which provides income stability personnel.

Public institutions are required to register in both accounting staff wages due for work and contributions on insurance and social protection. It is supported by contributions from employers and employees for state social insurance, social security, health and social protection.

Monthly calculation basis of individual social security contribution for the insured is represented by: a) individual wages gross of monthly increases and additions including regulated by law or collective agreement, and / or income insured; b) the insured monthly income provided in the declaration or contract of insurance, which cannot be less than a quarter of the gross average salary per economy.

For all obligations related to salaries and similar income assimilated to staff from public institutions (both the payable by the employee and the part that is the responsibility of the employer) to be sent to NAFA statement 112 in electronic form by the 25th of the month for the previous month.

In the following we will point out some defining issues related to expenditure on human resources, the ministry called Green Paper suggestive accounting of public institutions.

Operating expenses are routinely made by public sector entities to achieve specific objectives.

Examples of operational expenses of public institutions are spending on stocks; expenditure on works and services executed by birth; expenses with other services performed by birth; other taxes, taxes and similar; staff costs; other operating expenses: other expenses financed from the budget: cost amortization, provisions and adjustments for depreciation or impairment losses.

It can be seen that expenditure on staff occupy a very important place within operating expenses.

Financial performance is affected by a very important type of expenditure under investigation, namely that communication is about human resources related expenses.

Romania's current accounting costs for human resources (called personnel expenses) are covered as follows: expenditures for staff salaries; Salary expenses in kind; expenditure on social security (social insurance contributions of employers, employers' contributions to unemployment insurance, employer contributions for health insurance, employers' contributions for work accidents and occupational diseases, employers' contributions for holidays and allowances, contributions year-to employers Guarantee fund for payment of

²⁵ *Monitorul Oficial al României*, nr. 108 din 2 februarie 2005.

²⁶ *Monitorul Oficial al României*, nr. 824 din 7 decembrie 2012.

²⁷ *Monitorul Oficial*, Partea I nr. 1035 din 22 decembrie 2016.

wage claims, other expenses on insurance and social protection); expense allowances delegation, secondment and other salary rights; personnel expenses for the incentive fund.

Staff costs are recognized in the period in which the work²⁸ was performed, although payment is made in the future.

At the end of this part of the communication we will quote a work in which I have referred, instead of spending public expenditure and human resources in these expenses.

Public spending of achieving the state's role as a public authority and as an economic and they are supported by its citizens. As the role of the state is achieved through public policy, public authorities which transpose into life, public spending can be defined as the costs of the policy.

In public institutions, accounting costs are kept in separate accounts by nature and destination. Depending accounting expense accounts were active. Debited with the expenditure incurred during the reporting period and credited to the settlement (distribution) costs on results.

Staff costs or human resources include: wages, the remuneration in kind, employers' contributions to social security, unemployment insurance, health insurance, work accidents and occupational diseases, other expenses on insurance and social security benefits, delegation detachment.

The accounts are used in group 64 "Staff costs". Expenditure and revenue accounts are closed, if applicable, monthly, or at the latest financial statements by account 121 "patrimonial result."

Costs are allocated on earnings and revenues to be incorporated into results. In turn account 121 "patrimonial result" is an account balance, being included in the category of capital accounts. Account credit balance surplus highlights the patrimonial and patrimonial debit balance deficit. Thus the 121 account "patrimonial result" makes the link between expenditure and revenue accounts, on the one hand and balance sheet accounts, on the other hand.

Compared to personnel expenses in regulating private entities, according to OMPF 1802/2014 approving the Accounting Regulations on individual annual financial statements and annual consolidated financial statements²⁹, in public entities only difference related to the accounting and financial reporting and tax these costs would be that they do not cause a tax result (as profit tax) to be taxed (as in the case of companies paying corporate tax), but a result of the balance sheet as surplus or deficit heritage, which is not subject to taxation (if surplus asset).

In conclusion outcome heritage in public institutions depends largely on staff costs and charges, if they increase generates reducing surplus or development or widening, and if you drop them contribute to the increase in excess or eliminate or reduce the deficit, which may cause on all public entities increase or decrease in equity from one period to another.

CONCLUSIONS and PROPOSALS

The main conclusions drawn from the comparative analysis of accounting and the format of financial statements tangible assets, inventories and spending on human resources from public institutions and private firms, according to specific international accounting standards and regulations specific to the two areas:

1) The two accounts (one in public and one at commercial companies) which tackles assets Tangible stocks and expenditure on human resources are governed by rules and

²⁸ Oncioiu Ionica, Oncioiu Florin Răzvan, Chiriță Sorin, *Op.cit.*, pp. 61-80.

²⁹ *Monitorul Oficial al României*, Partea 1, Nr.963 din 30.12.2014.

regulations (Order no. 1917/2005 for accounting and public institutions that OMF 1802/2014 for private companies) and are based on different international accounting standards (IPSAS for accounting of public institutions; IFRS for accounting firms);

2) Plan accounts of the two types accounting for assets Tangible stocks and expenditure on human resources are almost identical, with very small differences (at the current assets and inventories), related to the fact that public institutions are a number of fixed assets and inventory items that are not private companies;

3) Accounting and format of financial statements of public institutions in Romania are in line with the provisions of IPSAS, noting that many of the items taken could be changed, given the permissiveness and the variety of methods and techniques provided in these standards that can be retrieved to start or midway through the Romanian regulators;

4) In public institutions in our country, the financial statements are prepared annually and quarterly, while the companies are prepared annually, and medium and large companies and half;

5) balance sheet format public institutions comprising the top current non-current instead of assets (as they are called at companies), and in the equity incorporating funds (state) instead of capital subscribed and paid up as at companies;

6) At public institutions discuss patrimonial result account while the companies we're dealing with the profit and loss account; account the outcome of the public institutions find patrimonial revenue and operating expenses, while the profit and loss account of the companies have revenues and operating expenses; it should be mentioned that at amortized from public institutions find patrimonial income, both from funding, subsidies and income from commercial activities, while the profit or loss of companies only have income from commercial activities and grants;

7) Structure notes to the financial statements of the two entities (public institutions and companies) resembles a small extent, many components are completely different;

Proposals drawn from benchmarking accounting and format of financial statements tangible assets, inventories and spending on human resources from public institutions and private firms, according to specific international accounting standards and regulations specific to the two areas

1) Because IPSAS for tangible fixed assets of public institutions requires the use of all methods of amortization, and national legislation for accounting in public institutions for the same assets provided only use the straight or un-amortization of such assets in the public domain, national accounting and law firms are allowed to tangible assets depreciation using three methods (linear, digressive; accelerated), we wish to make the following proposals:

1a) accept and public institutions use three methods of amortization, as the company, namely: linear; digressive; accelerated;

1b) to accept the use of depreciation, for starters, linear and tangible fixed assets that are part of the public domain;

1c) uniform terms for the designation of fixed assets both in the public and private namely acceptance in both accounting and annual financial statements formats to common terms as name and meaning: fixed assets instead of non-current assets; Tangible fixed assets Tangible non-current assets instead (same for intangible and financial assets, even if not covered by this research, but it still falls in the category of fixed assets);

2) Since the account of execution of the financial statements of public institutions operating expenses (including human resources) are presented only by nature, not by purpose, as the company, except that in the notes to the financial statements of companies is the structure of operating costs and by destination (as reflecting the cost of products or services), we propose that in the notes to the financial statements of public institutions to accept the

operational expenditure and according to their function (to reflect the cost of different programs in public institutions) ;

3) Revaluation of assets corporal from public institutions, which should be done periodically (3 in 3 years according to current regulations) to establish his rule for this process to be carried out exclusively by appraisers approved by addressing as a priority, based approaches costs (especially in the case of real estate).

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ROMANIA AND THE NEED FOR DEFENSE AGAINST HYBRID AGGRESSIONS

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Abstract: *The status quo of the security environment is under the influence of hybrid warfare, emerged as a mutation of conventional warfare, generating instability, turbulence and a broad range of unexpected threats. The existing technology, social, economic, and especially military gaps between states, expressed through superior military capabilities, the utilized strategies and the conduct of forces, but also the presence of international organizations which condemn war, ensuring the independence and sovereignty of states, have led to the emergence of hybrid aggressions, launched by state and non-state actors. Thus, the specific military actions gained an unconventional, asymmetric character, making it difficult to predict, identify and counteract, since the population, governments and critical infrastructure have become favourite targets. At the Romanian State level, the main guide to currently counteract hybrid aggressions is the National Defence Strategy for the period of 2015 – 2020, which is the fundamental document in the field of national defence and security, as a pillar of international peace and security.*

Keywords: *hybrid war; anticipation, identification, counteracting hybrid aggression; National Defence Strategy of 2015 - 2020; national defence and security; international peace and security.*

Analyzing the evolution and pattern of military conflicts, we can say that the hybrid war existed since forever, the use of which is necessary especially because inequality of combat forces specific to the Middle Age or because of military alliances and the relative uniformity of the art in the field that began in the end of Modern Age.

We can say that in fact the hybrid nature of war has done nothing but worsen over time. This state of fact was caused by various factors, such as the adoption of the war waiver pact since the 1928, creation of international institutions whose role is to contribute to ensuring independence and sovereignty, to establish the principle of prohibition of force in relations between states by the United Nations Charter, the obligation to respect International Humanitarian Law, the emergence of political, economical and military alliances and modern combat equipment.

All these factors have led to the emergence of new forms of conflicts generated by entities or countries that have adopted other forms of aggression to avoid spurious character of conventional warfare, sanctions imposed internationally and opprobrium generated by the use of conventional forces, but also to overcome the military capabilities gap recorded in relation to the enemy.

The term hybrid has emerged as a necessity for describing the diversity of new types of conflicts characterized in particular by a blurring of lines between war and politics, and between combatants and civilians, occurred at the end of the twentieth century, allowing potting the complexity of wars today determined by the multitude of actors involved and nonspecific actions that mix conventional and especially unconventional conflicts clearly differentiating them from classics.

The XXI century started with a new challenge to the very nature of international relations, through major threats to the security of states, bringing to the forefront a new kind of hybrid war to which contributed extensively factors such as globalization, common markets, economies interlinked and interdependent, the Internet as a way of spreading information, media, civil society and social networks, causing a major shift in its typology.

Thus, the hybrid war has become more nuanced and diversified, a combination of conventional warfare, irregular means, asymmetric, held simultaneously in various plans - economy, energy, cyber, media, social, identity - often indirectly by the aggressor state, through intermediaries benefiting from economic means, military, informational and propaganda groups consisting for national liberation, insurrection, guerrilla, military, paramilitary or terrorist. This war is carried on a nonconformist base, unethical, with no limits, no restrictions and directed specifically on population, critical infrastructure and state institutions, the aggressor launching attacks subversive and undeclared theatres of combat, which is atypical and extremely malleable, and could trigger at the border and move in the middle of cities or vice versa, the state military forces, being most often unprepared and overwhelmed in this anarchic conflict situations.

The hybrid war, approached from a theoretical point of view, was the subject of multiple studies highlighted in recent years in specialized publications, thus the term being taken later on in debates with military character and adapted by some regulations of training of the American army and later of the allied armies

Although the term of hybrid war is circulated in specialized circles, especially after 2005, its meaning it is not entirely new; in the American specialty literature being used for the first time the precursor concept of combined war, which is said to be found in „...all major conflicts that had significant conventional and unconventional components that acted simultaneously under the same command.”

Since the war is "... a continuation of politics by different means", the reality shows that hybrid war represents the merge of the two principles, politics and war. Given that, at the moment, the proportion of conventional and unconventional is different from one conflict to another, we must note that, as the feature unconventional is stronger, the conflict itself becomes more complex and difficult to solve.

The fact that the hybrid war is a subversive war, undeclared and unassumed explicitly, offers the advantage to the states that initiate it, to adopt any diplomatic and political manoeuvring. Classical laws of international warfare, and military doctrines, are eluded due to the fact that this form of conflict has yet to be coded as such. War is not fair, rules of International Humanitarian Law are no longer met, the armies involved are irregular, non-conformist and attacks of any kind are used, gradually covering the entire planet.

Specific in hybrid war is that it no longer means the total annihilation of the enemy, but control, domination, and his dominion by subversive techniques. Thus, the essential weaknesses are not only military, but also societal, non-military, which one that generates aggression seeks to exploit.

Vulnerabilities such ethnic tensions, weak or corrupt institutions, economic dependence or energy, political conflicts, social tensions arising from the economic crisis, poverty, illiteracy, etc. represent elements of risk, which can take advantage of an aggressor state. Based on these vulnerabilities, a hybrid war performs different actions, especially if interests of the state launching the aggression intersect with state interests of the one assaulted and goes, depending on the strategy and the objective pursued by the aggressor, from terrorism to media propaganda, using actions military irregular and not assumed.

The economic component (sanctions, embargoes, and price fluctuation guided games free market) is very important. However, propaganda that accompanies any form of conflict especially uses our hybrid messaging religious, nationalistic and less ideological. Moreover, propaganda, disinformation and manipulation plays in hybrid war, a complementary role at all, but as important as that of Special Forces or economic sanctions and diplomatic manoeuvres. Appetite modern man to social networks, the spread of information through the Internet, modern means and easy communication is now weapons of aggression hybrid, which handled skilfully, can destabilize a country, can break governments or destroy economies,

sometimes with cumulative effects that can conventionally overcome the aftermath of a conflict.

In recent years, the concept of hybrid warfare has become a term used in speeches highly held, especially in political and military circles, although the term is sometimes used with the understanding imprecise. Its use was generated by the need to use a term widely accepted, and by pressure generated by recent events with global impact on international security, such as the annexation of Crimea by Russia and aggression to the East Ukraine or overflow wave of refugees from Asia, Africa Europe and the Middle East.

Present positioning of Romania to the hybrid war and the applicable legal framework

Being a border country of the North Atlantic Treaty Organization, Romania is concerned with security in the Black Sea region, as well as on security and cooperation relations with Ukraine and Moldova.

To counteract a potential conflict of hybrid type, in all its aspects (in terms of doctrine, institutional and capabilities and human resources), Romania should focus the efforts of all ministries and government agencies, in the sense of fully cover the areas of hybrid aggression.

Moreover, the Romanian Army, as a basic pillar in peace and security, needs a considerable number of experts, academics and practitioners in warfare hybrid to be selected and trained, currently being placed particular emphasis by its political and military leaders on hybrid warfare and that of interagency cooperation.

In this regard, the effort will focus on the political decision because, first, national security policies are those that are concerned with the management capabilities necessary for national defence purposes of defining force structure and missions of their preparation for deployment and employment in battle, ensuring their sustainability, then being outlined strategies for security and defence. Security policy formulation should be given that, in terms of diachronic manifested following trends in the development of non-conventional areas: from simple to complex; autonomous action from the work environment met; from military to non-military; from conventional to unconventional; the primacy of primordial structure forces the effects achieved; the non-kinetic resources to kinetic means and lethal effects in non-lethal effects.

The comparative analysis of policies, strategies, doctrines, normative framework to operationalize these policies, especially the changes in force structure of national security of the countries in Central and Eastern Europe, reveals that these new democracies is presented as They are full of vulnerabilities and they either do not understand or cannot or are not allowed to take effective measures to counter non-conventional aggression. They still pay economic price to be defeated after the Cold War, another type of confrontation that does not fit into the classic definition of war.

Implementing the concept of hybrid war in the armies of these countries has remained at abstract; their military forces were only "demassified" or specialize in certain niches within the North Atlantic Treaty Organization and the European Union.

Lack of allocating sufficient resources to defence or access to technology may be justification for this delay, along with effective action of aggressors, boosted by factors such as vulnerability institutional chronic consequence of corruption makers or undermining the social fabric, perverting values identity of the nation. Although at the strategic level Romania through its fundamental document named The National Defence Strategy recognizes asymmetric risks, such as military and non-military, including those that are manifested as aggression terrorist, psychological, informational or computer is impaired on development of institutional mechanisms, especially at the military level, to implement policies and strategies

to counteract these types of attacks.

If the National Defence Strategy of Romania, adopted by the Supreme Council of National Defence on 17 April 2006, but remained in draft form in 2007, contained some disparate aspects regarding aggressions non-conventional, National Defence Strategy of Romania since 2010, a subsidiary of National Security and the Government White Charta, had a more applied to the phenomenon of non-conventional aggression. 895/5000

At a declarative level, the latter "... reflects a balance between the risks, threats and vulnerabilities classical and unconventional", having multidimensional size simultaneously targeting military, political, economic, social and environmental and safety by proposing an integrated management promoting the idea of community security. Vulnerability that was identified, the clumsy "to control the phenomenon of media campaigns in order to denigrate state institutions by disseminating false information about their work; Pressures media trusts on the political decision "instead of the generic concept by aggression informational indigested yet, National Intelligence Community is to support enhanced interagency cooperation and Integrated Intelligence Office was to be operationalized.

But we must note that the National Defence Strategy for the period 2015-2019 reflected the need to promote an expanded concept of national security grounded in constitutional democracy and mutual respect between citizens and the state, aimed at converging towards the interests of national security, manifested in the fields of defence - double understood as normative, national defence and collective defence; public order; business intelligence, counterintelligence and security; education; health; economic; energy; financial; environmental; critical infrastructure. The strategy has an integrative and multidimensional approach, which combines the defence dimension and balance each with a number of other dimensions, such as: public policy; intelligence, counterintelligence and security; diplomacy; crisis management; education, health and demography.

The need to extend the concept of national security is motivated by ensuring convergence with European principles of security, developed in the European Security Strategy and the Internal Security Strategy of the European Union and the objective national security aims to develop capabilities to counter asymmetric threats, admitting "... the difficulty to define risks and threats by the classical asymmetric and hybrid."

The Strategy honestly recognizes that reaction institutional during situations of crisis is affected by scarcity of resources and inconsistency in managing various types of risks. This vulnerability becomes even more important if we consider the ability of interoperability of various state institutions must act in case of asymmetric threats and hybrid type.

The other vulnerabilities of Romania to the aggressions of hybrid type are also numerous: absorption of European funds, using public money, energy, critical infrastructure, agriculture, environment, justice, health, education and scientific research, social polarization, capability and local governments to implement national and European public policies, corruption, poverty, demographic decline, labour migration specialist disparities between regions and socio-economic districts, the fragility of civic spirit and solidarity.

However, it is accepted as a key action to develop capabilities to react in case of asymmetric and hybrid type threats, identify and counteract asymmetric hybrid type and the development safety culture.¹

Although the objective and direction for action related to hybrid war are correctly formulated, however on threats Chapter III does not contain this component, which underlines the lack of correlation of internal strategy. In addition, it seems to put all the weight on countering unconventional threats type or size hybrid intelligence, counterintelligence and security and to a lesser extent too, on the defensive, which should be remedied in the future.

¹ http://www.presidency.ro/files/userfiles/Strategia_Nationala_de_Aparare_a_Tarii_1.pdf

It is important to keep in mind that the National Defence Strategy for the period 2015-2019 must be related to two other reference documents with specific character, namely Romania's Military Strategy and the Defence White Charta.

Thus, the programmatic document for the development of the Romanian Armed Forces to counter the hybrid operations is the Military Strategy of Romania. Under its provisions, states unequivocally that "the most striking feature of the current military environment is hybrid war, adopted by certain state actors" as is specified course of action "... structural adjustment of the Romanian Armed Forces to ensure victory met with the skills necessary for effective waging, together with other institutions dealing with defence, as war, traditional and the unconventional hybrid". Directions to achieve a sustainable transformation of the military explicit support concept development to counteract the hybrid warfare, development and modernization of equipment specific training or revitalization conceptual, normative and curricular system of military education.

However, when speaking about the structure C2, about organizing force structure, about the development of military capabilities and personnel policies on interoperability, equipment and necessary infrastructure to counter war Hybrid areas of they are not included as measures in any of the three stages of prioritization Romanian Army's transformation.

Last major document refers to the risks and threats of the non-conventional or hybrid, but not least, is the White Paper of Defence, showing prospects Ministry of Defence on strengthening the operational capacity of the Romanian Armed Forces and developing the capabilities necessary to perform tasks, resulting from the execution of the strategic defence review process in the short term, covering the period 2015-2019, and guidelines in the medium term until 2027. It is important that formulating a level of ambition which states that "the Romanian Army must be able (...) to plan and conduct an operation of defence on national territory to counteract aggressive conventional, unconventional and / or hybrid, using in an integrated way, all the instruments of national power until intervention forces Allied main ". In the chapter on risks and threats it perceives the existence of a mix of components unconventional and conventional and the innovative solution, the White Paper of Defence proposes to implement the model inter-national security and the development of specific capabilities already in peacetime as well surveillance and early warning systems, and units of psychological operations or cyber defence structures.

From the analysis of all these documents, we conclude that between supporting theoretical domain and ensuring the necessary capabilities there is a real mismatch in this approach legally resident the main vulnerability of the moment, and in his absence the budgetary allocations for acquisitions or investments would not be able to efficient functional than existing capabilities, insufficient anyway, through reorganization.

In terms of quantitative analysis, it is noted that the term hybrid arises in Military Strategy of Romania 15 times, compared to only 3 times in the White Charta of Defence developed just a year ago, which seems to be as relevant and welcome as it is overrated and conformist.

After each new war, military strategists who break down and analyze it, trying to figure out in advance how it will be next war or a conventional one, toward a modern state with a well-organized army, or a counterinsurgency campaign? According to them, the future will be somewhere in between. More and more military strategists believe that the war has fundamentally changed and that we should prepare for wars hybrid, which will fight fighters hidden behind computers, which launches attacks hybrid social media or media or an accumulation of foreign investments "poisoned" to undermine the national economy and to seize the resources of a country vulnerable to insurgents or combatants and non-conventional military armed with the latest techniques and have the modern information technologies.

Although the Hybrid war, without posing an exception, will be an important feature of the future security environment, analysts and military strategists do not exclude completely

the emergence of classical wars, conventional or symmetric and the hybridisation of these will be a major challenge for all international actors. Ignoring these „genetic mutations” of the war and focus exclusively on the development of modern military capabilities will not be a solution.

The past reveals that no state army has claimed victory in front of a non-state enemy engaged in an unconventional war. The evolution of wars requires increased flexibility and adaptability, we must understand that we could not achieve victory in the face of sophisticated, adaptive, innovative, and motivated enemies, fighting without rules, doctrine or military ethics, unless we will realize that the answer to a hybrid aggression will be a hybrid one.

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SEA CONTROL – A MARITIME POWER CONCEPT IN PROGRESS IN THE BLACK SEA

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Abstract: *The paper addresses a relatively recent issue relating to the period after March 2014, when the Russian Federation annexed the Crimea and has shown consistency and firmness in the allocation of resources to strengthen the Russian Black Sea Fleet capabilities. Article attempts in the first half without question the legitimacy of belonging Crimea from the Russian Federation to review briefly the history of the peninsula relative to Russia, and in the second half to analyze, based on naval doctrinal definitions of the concept of using sea power - SEA CONTROL, the submarines capabilities entered in service of the Russian Black Sea Fleet which actually are operating in the Black Sea. The submarine advantages and resulting in operational environments SURFACE and AIR ends the analysis and provides a perspective about SEA CONTROL that the most powerful actor on the Black Sea can achieve.*

Keywords: *submarine, capability, Crimea, Black Sea.*

Introduction

After the annexation of the Crimea Peninsula in 2014 Russia demonstrated consistency and firmness in allocating resources to enhancing capabilities of the Russian Black Sea Fleet.

Without calling into question the legitimacy of Crimean membership to Russia, after a brief review of the history of the peninsula we are trying to analyze, in the light of the naval doctrinal definitions of the concept of using maritime power - SEA CONTROL - the submarine capabilities recently entered in the service of the Russian Black Sea Fleet.

The submarine advantages and what it determines in all the operational environments concluded the analysis and provides a perspective of SEA CONTROL that the most powerful actor on the Black Sea can achieve at least at the surface and submarine environments.

A brief recent history of the Crimean peninsula

According to a text¹ published by Mark Kramer (Director of the programme for Cold War Studies at Harvard University and a researcher at the Centre for Russian and Eurasian Studies at Harvard), on the website of Wilson Centre, and performed by the website www.historia.ro², the Crimean Peninsula was part of Russia from 1783, when the Tsarist Empire, an attached after the defeat of the Ottoman Empire's forces.

¹ <http://www.wilsoncenter.org/publication/why-did-russia-give-away-crimea-...> accessed date 18.02.2017

² http://www.historia.ro/exclusiv_web/actualitate/articol/ce-renun-rusia-crimeea-acum-60-ani accessed date 18.02.2017

In 1954, the USSR Government decides to transfer Crimea from the authority of the Russian Socialist Federal Soviet Republic to the Ukrainian SSR. The transfer was announced in the Soviet press in late February 1954, eight days after the Presidium of the Supreme Soviet of the USSR had approved a resolution to that effect.

On February 19 it was published the text of the resolution and some extracts from the proceedings of the Presidency. Until the collapse of the USSR the problem remained undisputed and from that time was not made public other information regarding the transfer.

In 1992, after the dissolution of the Soviet Union, there are new additional information about topic in Historical Archive, publications published in the USSR in the period 1955-1962, back on the market, which has published the declassified documents from the former Soviet archives relating to the transfer of the peninsula, the presidential documents from the Russian archives and other archives, currently in the State Archive of the Russian Federation, which did not bring anything new in addition to what they already knew, namely that from 1954: 1) *"the Crimean assignment was a " noble act on the part of the ruse ' to commemorate the anniversary of 300 years since the "reunification of Ukraine with Russia" (a reference to the Treaty of Pereyaslav from 1654) and to "show the boundless confidence and love of the Russian people towards the Ukrainian people" and 2) the transfer was a natural growth "of the Crimean territorial proximity to Ukraine, the commonality of their economies and the close links between agricultural and cultural Crimea and the Ukrainian SSR"*

In the 1950s, the population of 1.1 million inhabitants of the Crimea peninsula, was composed of 75% ethnic Russians, Ukrainians and 25%. The community of Tatars who had lived in Crimea for centuries until May 1944, they were deported en masse by Stalin to Central Asia, where they were not allowed to return for forty years in native places. In Crimea have been deported Armenians, Bulgarians and Greeks, thus realizing multi-ethnic Stalin purge of the peninsula.

In 1954, Crimea reached a maximum of "Russification" relative to its history. In 2001 the population distribution in the peninsula was distributed as follows: 58% ethnic Russians, ethnic Ukrainians, 24% 12% ethnic Tatars and 6% other nationalities.

Without removing the title and theme of communication, the idea that we want to strengthen is that the distribution of the population on Russian peninsula was a determining factor, and perhaps having the character of irreversibility in recent annexation to Russia. Although Crimea is related to southern Ukraine through the isthmus of Perekop, Eastern region of Kerch Sea is very close to Russia. The peninsula had indeed economic and infrastructural links with Ukraine, but its cultural ties with Russia are obvious closer.

In the first half of March 2014 Russian Federation annexed unilaterally Crimea, and by the Treaty of cession signed on March 18, 2014 by the Russian Government and the authorities of Crimea, the peninsula status has been changed into "Republic", thus joining the other 21 "republics" within the Russian Federation, formed now from 84 federal units. Enhancing the basic location of the Russian Fleet in the Black Sea, the port military of Sevastopol where they had the home port the Russian Fleet composed by old vessels. The only operational submarine was at that time, ALROSA project 877 KILO-M.

The Black Sea control in the operational environments surface and underwater

Three years after the annexation of Crimea to the situation is different. From 2012, Russian President Vladimir Putin declared that the purchase of new warships and submarines for the Navy will be a priority over the next decade and that the Russian Government has allocated five billion rubles (\$ 166 billion)-that is a quarter of the entire budget of the procurement of weaponry by 2020-for this purpose. If at that time the statements were

received with reserve over these budgetary allocations, the entries of vessels and submarines after 2014 have shattered any trace of doubt in this regard.

We believe that the 13 December 2015 was the date on which the Russian Federation has confirmed to the most distrustful analysts the coherence of the endowment programme with 6 submarines 636 Varshavyanka in the Black Sea. At 13 December 2015, the second submarine of the class Project 636 KILO-Varshavyanka-ROSTOV NA DONU³ crossed the Bosphorus Strait and entered the Black Sea to Sevastopol after before that had participated in the exercises of the Russian fleet off the coast of Syria and released for the first time for the class, KALIBR cruise missiles, on land-based targets.

It have to confirm such that what happened three months before, on September 17, 2015, when NOVOROSSYSK⁴ - the first of the six KILO class submarine Project 636 Varshavyanka had entered the Black Sea escorted with ships of Turkish Navy and Turkish Coast Guard, was not only a started propaganda war. The Russian submarine programme for the Black Sea has consistency.

On June 29, 2016 at the third submarine STARY OSKOL⁵ have to go into the Black Sea and headed Sevastopol.

The fourth new submarine designated for the Black Sea Fleet, KRASNODAR (B-265), during operational tests in the Baltic Sea in April 2016, was involved in a collision incident (unconfirmed by Polish Navy) with the Polish submarine ORZEL or a Polish patrol vessel and returned to St. Petersburg⁶ for repairs. It seems the incident was one of the reasons why, in the first half of July, President Vladimir Putin ordered dismissals and changes in the leadership of the Russian Baltic Fleet.

The last two submersibles built at JSC "Admiralty Shipyards" in St. Petersburg for the Black Sea are "VELIKIY NOVGOROD"⁷ entered in service of the Russian Navy on 26 October 2016 and "KOLPINO"⁸ on November 24, 2016. They follow the operational test period in the Baltic and North Sea and the Mediterranean, probably before entering the Black Sea, most likely in the first half of the year 2017 with KRASNODAR.

So, in the second half of 2017 will be, most likely, seven operational submarines from which six pretty new, extremely difficult to detect, into a sea with hostile underwater detection high-profile for warships and antisubmarine aircrafts in the most part of the year (April to January).

The Romanian Navy doctrine FN 1 of 2010 defines the sea control as follows: *"the exercise of freedom of action to use space in their own interest, over a period of time and if the situation requires, prohibiting its use by the adversary. Sea control includes aerial space above, the volume of water and the related sea bottoms"*.

With respect to the concepts of the use of power all seagoing FN-1 stated: *"sea Control consists of three control environments of the area in which it is required. Minimum requirement of aerospace control at sea is to ensure and maintain the air situation, but to achieve a tighter control of the sea or when it is likely an air attack, air superiority will be a heady requirement required"*.

Doctrinally speaking, we cannot discuss about SEA CONTROL without air superiority fighter. The idea that we are trying to develop through this communication is that using those seven submarine Russia may gain control of the Black Sea (at least in operational

³ <https://turkishnavy.net/2015/12/13/foreign-warship-on-bosphorus-2015-part-50/> accessed date 16.02.2017

⁴ <https://turkishnavy.net/2015/09/17/russian-submarine-novorossiysk-passed-through-bosphorus/> accessed date 15.02.2017

⁵ <https://www.youtube.com/watch?v=eS7kJnsvJRw> accessed date 20.02.2017

⁶ <http://mil.today/2016/Incidents8/> accessed date 20.02.2017

⁷ <http://admship.ru/?p=9395&lang=en> accessed date 10.02.2017

⁸ <https://www.rt.com/in-motion/368091-russia-super-stealth-submarine/> accessed date 10.02.2017

environments *surface* and underwater) and can block the traditional lines of communications or isolate sea areas.

We argue analyzing advantages and capabilities of such platforms, subsea from data already known from the project 877 KILO and other information from open sources:

- advantage to identify a surface target at a distance considerably larger than the distance that the surface ship identifies the submarine;
- they can use the water profile and the depth variation of the composition of Black Sea, salt layers of sound velocity and acoustic submarine channels in its own advantage to avoid detection and to escape from the organized antisubmarine hunting zones at the surface and in the air;
- the improvements in the stealth technologies already applied to old project (KILO 877) famous for silent underwater operating and difficulty to detect, we refer here to the hull shell (outside hull) and the silent propulsion system;
- intell capability (SIGINT, COMINT, ELINT, IMINT) pretty new and probably very efficient;
- torpedo capabilities to destroy surface targets;
- capabilities to hit or destroy surface targets with KALIBR (ship to ship missile) launched from immersion or periscope immersion (KALIBR ranges are not yet fully known but following the previously launches from Caspian Sea and Mediterranean Sea, they exceed the dimensions of the Black Sea);
- capabilities to hit or destroy land targets with KALIBR (cruise missile) launched from immersion or periscope immersion
- offensive mining capabilities
- capabilities to launch/recovery special forces teams;
- GPS signal receiving capabilities from their own national system (GLONASS);
- RMP (Recognized Maritime Picture) receiving capabilities (high degree of possibility) in immersion or periscope immersion about the operational area which give it an upper freedom of manoeuvres in an environment that it already dominates;
- less-known communications and sensors capabilities - here should be considered encrypted communication with very fast emission/receiving, ESM (Electronic Support Measures) equipment to intercept emissions throughout the electromagnetic environment that can be used at periscope immersion, without betray submersible position;
- the possibility to operate underwater even when at surface the weather condition are completely hostile to navigate or to hunt the submarine;
- modern capabilities to regenerate the air, sea water desalination, storage batteries with long time of discharge used to propulsion, all of which are factors extending the period in which the submarine can stay submerged;
- invulnerability to an attack or a stroke EMP (electromagnetic pulse) type even nuclear;

The advantages of a submarine Project Kilo-class 636 Varshavyanka reported to Allied antisubmarine capabilities operating in the Black Sea not end here. It is not the author's intention to make an apology for submarine or to sustain its invulnerability. But it must take into consideration that for one submarine platform project 636 which operate underwater the required number of surface and air capabilities designated to detection and neutralization is high. If this number is multiplied by six (assuming that since June 2017 they can operate simultaneously in the Black Sea) the result is worrying. Also, it should be considered the limitations of military vessels and tonnage, other than those belonging to the Black Sea littoral states, which can operate under the Montreux Convention⁹.

⁹ <http://www.mfa.gov.tr/implementation-of-the-montreux-convention.en.mfa> accessed date 28.02.2017

Extremely important is the psychological effect of discouraging it can produce into a fleet a series of strikes coming from underwater followed by sinking, injuries, without that the strike source to be identified.

CONCLUSIONS

This paper does not address the issue of legitimacy of belonging Crimea to the Russian Federation (legitimacy rooted enough in the history of the area) but tries to emphasize the projection of future judgment and determination to strengthen in a bubble A2 / AD (AntiAcces / AreaDenial) peninsula with all the capabilities found here.

This communication is not intended to be of a fatalist or alarmist about the capabilities of submarines of the most powerful actor in the region, but the dimension of energetically resources from the western of Black Sea, area that interests us as a nation, can interfere anytime with the dimension of military forces of the most powerful actor. Thus, no later than 17.02.2017, Mark Beacom, general manager of Black Sea Oil and Gas (BSOG) declared about discovery in the Romanian Black Sea an amount between 10 and 20 billion cubic meters of natural gas and investment to start production in 2019 could reach 500 million dollars¹⁰. This project is estimated that will produce about 10% of Romania's consumption for five years.

On 28 September 2016 General Valery Gerasimov - Chief of Staff of the Russian Armed Forces declared at the "Interfax-AVN" at the end of the exercise "CAUCAZ 2016": "We fully control the Black Sea. The Black Sea Fleet stationed in Sevastopol, is capable of destroying potential enemies, already at the stage where they trigger ports dislocation".

The Sea Control concept therefore begins to materialize in the Black Sea and the necessary means for its practice are obviously there.

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BUDGET DEFICITS. FINANCING BUDGET DEFICITS WITHIN THE EXCESSIVE DEFICIT PROCEDURE FRAMEWORK

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Abstract: „Budget deficit is a sin. Usually it is perceived as something being morally wrong, very difficult to avoid, not always easy to identify and quite hard to measure exactly”¹. If deficit is a „sin”, Romania has to take responsibility for this „sin” and approve budgets with deficits that might assure its economic development and that it does not come close to the limit of impossibility of activating the excessive deficit procedure.

Keywords: budget deficit, excessive deficit procedure, loans, bonds, Stability and Growth Pact.

The current period of development in Romania is characterized by a need of financial resources a lot over the existing resources. As Romania has pledged through the Stability and Growth Pact of the European Union (SGP), to allow a deficit of maximum 3% of the gross domestic product (GDP), the first real issue it faces is elaborating a consolidated budget that might respect the principle of budget balance, budget deficit defined as „the current expenses that exceed the current income”². This happens in the context of the globalization phenomenon in which capital flows are liberalized, just like as the investment flows, the commercial and labor force flows, corroborated with a fierce competition internationally, which may lead to unpredictable economic phenomena. Moreover, as the economic evolutions in a country may influence the economic conditions of another economy function of its own interests, this may eventually generate – in less stable economies – a lack of confidence in the financial system, in the market mechanisms, with the obvious purpose of inculcating a sense of uncertainty and distrust in the future of an economy.

As for the consolidated general budget, this is defined as „the entire amount of budgets constituting the budget system, including the state budget, the budget of state social insurances, the special funds budgets, the general centralized budget of territorial-administrative units, the State Treasury budget, the budgets of autonomous public institutions, the budgets of public institutions financed completely or partially from the state budget, from the budget of state social insurances and the special funds budget, from case to case, the budgets of public institutions entirely financed from own income, the budget of funds resulting from external credits contracted or guaranteed by the state and whose reimbursement, interests and other costs are paid for from public funds, the budget of external non-reimbursable funds, as well as other entities classified in public administration, aggregated, consolidated and adjusted according to EU Regulation no. 549/2013 to create a whole”³.

Furthermore, regarding the level of deficit established through the Stability and Growth Pact of the European Union (SGP) – instrument that assures the discipline of Member

¹ Eisner, Robert, „Which Budget Deficit? Some Issues of Measurement and their Implications”, *The American Economic Review*, vol.74, no.2, May, 1984, p.138.

² *Dictionary Macmillan of Modern Economics*, Publishing Codecs, București, 1999, p. 115.

³ *Law no. 69/2010, Law of fiscal-BUDGET responsibility*, Romanian Official Gazette, Part I, no. 330 of 14.05.2015.

States in order to avoid excessive deficit according to Regulation (CE) no. 1.466/1997, with its subsequent adjustments and completions and the Regulation (CE) no. 1.467/1997 of the Council of 7th July 1997 regarding the acceleration and clarification of applying the procedure of excessive deficit, published in the Official Journal of European Communities, issue L, no. 209 of 2nd August 1997, with its subsequent adjustments and completions⁴, this is established for each member country also depending on the public debt which, according to EU methodology, is actually represented by the debt of public administration reported to the European Commission (Eurostat) and published by Eurostat, expressed as a percent of Gross Domestic Product (GDP).

According to Law no. 500/2002, Law of Public Finances, the budget deficit is defined as „part of budget expenses that exceed the budget income in a budget year”, while the budget deficit calculated according to the European accounting system is defined as the *indicator that measures the impact of public administrations upon the rest of internal or international economies*, thus: „a) the surplus expresses the financial resources made available to other institutional sectors; b) the budget deficit expresses the financial resources generated by other institutional sectors and used by the public administration sector.”⁵

Actually, we are speaking about a primary deficit seen as the margin between the sum of public expenses generated by purchasing public goods and services, to which transfer payments within public authorities and the whole amount of fiscal income are added, as well as a total deficit regarded as the primary deficit, to which interest payments corresponding to state loans are added and which are inscribed in the budget as public expense.

Regarding the whole deficit corresponding to an ordinary budget year (a calendar year), this may be analyzed on two distinct components, as follows: as a structural deficit – when, although the budget has a cyclic adjustment, it has a deficit, as well as a cyclic deficit seen as the subtraction of the structural deficit from the total budget deficit.

The existence of budget deficit compels public decision makers to adjust the public expenses as much as possible to the level of fiscal income, and in case this is not possible or it is not desirable, it is mandatory to finance the deficit up to the limit assumed by Romania as a European Union member, through the Stability and Growth Pact of the European Union.

Practically, financing the budget deficit can only be undertaken by currency issuance or a state loan.

In case of financing the budget deficit through currency issuance, the Ministry of Finance sells Treasury bonds to the Central Bank (in the case of Romania, the National Bank) which, in turn, gives a loan to the Ministry of Finance, with an immediate effect upon the decrease of value of the bonds that would thus recur to the general audience.

By buying these bonds, Central Banks introduce on the market an amount of inflationist money up to the moment when the conditions that generated the currency issuance are eliminated.

In the case of the countries with market economy, Central Banks may also purchase Treasury bonds from the secondary market in order to accelerate the selling of such instruments.

In Romania, the Parliament issued laws that forbid covering deficit issuance expenses through currency issuance or direct financing from banks. Still, there is the possibility that National Bank may give loans with no interest in order to cover the temporary deficit, within certain limits established by law, from the whole amount of the approved budget. Therefore, the law allows re-financing internal public debt and financing the budget deficit through state loans, the financing of the budget deficit through state loans practically determining a relative state of balance between needs and resources.

⁴ *Idem.*

⁵ *Law no. 500/2002 regarding public financing*, Romanian Official Gazette, Part I, no. 597 of 13.08.2002.

The state making loans from the financial market in order to cover structural deficits has to do so in such a manner that the resulting benefit should cover the debt service or, in other words, the loan interest and covering the supplementary expenses, such as market utility loss by depriving it of the resources used for covering the deficit and not for financing the goods it offered.

The loans made for covering budget deficits do not have as destination, in most cases, expenses such as investments that may, in turn, bring added value, but, on the contrary, these loans are meant for consumption, which makes these financing expenses be covered from the current fiscal sources in the years in which reimbursement is made.

In fact, financing the budget deficits through loans may be considered financing through anticipated taxes, which are however different from the current taxes by a series of characteristic features such as:

- contractibility – this is from a legal point of view an understanding between two parties, that is, the state and its creditors, that does not have a compulsory character like the current taxes. Another especially important fact is that these loans do not involve collateral security;

- the reimbursable character – this is compulsory but is different from current taxes because the money is not returned as goods or services, but rather through financing itself, without a deadline previously announced;

- counter-performance – not specific to taxes because the interest, the reimbursement or issuance payment may be made under the nominal value.

Budget deficits have multiple causes, being generated both by the economy of the state itself and by the international circumstances that may influence the internal situation of the country due to the interest rate or the currency exchange rate. A high deficit determines a high rate of interest, one that is continuously growing, thus becoming at some point unbearable and having as consequences diminishing the investments, reducing the value and, implicitly, labor productivity all of them resulting in decreasing the rhythm of economic growth. In addition, decreasing the rhythm of economic growth leads to a decrease of consumption and encouraging population's savings determined by a high interest.

In the situation of the European Union, where we find both developed and developing countries, this manner of approach favors the developed countries in the Euro zone to the detriment of the non-Euro countries as there will be an increasing demand of foreign currency which will determine the growth of the exchange rate and, eventually, the decrease of the purchasing capability.

All states have deficits, but while developed countries, with an enormous GDP and a low level of external debt only need adjustments, for the developing countries such as Romania, a strong deficit will result in drastic cut-downs of public expenses and especially investments in order to prevent, on short term, the sudden collapse of the living standards which will necessarily translate into social issues generating demonstrations and riots having as an effect, in turn, the collapse of the exchange rate leading in fact to growing deficits.

In Romania's situation before adhering to the European Union, in which deficits kept being high every year, in the moment of joining the EU, these deficits became troublesome. Diminishing deficits involved cutting down investments in the productive activities that resulted in decreasing active labor force, labor force that went to the Western countries, generating the current situation in which Romania has a deficit of qualified labor force that does not allow a normal development of the country.

According to the data provided by Romania's Chamber of Commerce, of the first hundred exporters, only three companies have a 100% Romanian capital. The first thousand of commercial societies make up around 48% of all Romanian exports and if we also add the fact that the Register of Commerce reports around 20,000 active firms more than can be found

in the records and financial evidence of National Agency for Fiscal Administration, we notice which the real state of Romanian economy is and which measures should be taken right away.

The data above outline the situation of Romanian economy in which multinational companies realize most exports but which, paradoxically, bring only an insignificant contribution to the tax on profit for growing the GDP. Actually, the companies with foreign or mainly foreign capital do not make profit or the profit is exported by not paying taxes on Romanian territory. Therefore, it is absolutely imperious to apply the European Directive regarding taxation in the place (the state) where it is made or, in exceptional cases, taxation should be made in different percent of the turnover for companies that for subjective reasons do not make profits. If these measures are not implemented, the rhythm of growth of the GDP will be quite low.

Referring to the Stability and Growth Pact, its purpose is to prevent the growing of deficits and public debt by the immediate corrections brought to the emerging deficits, which is accomplished through the Excessive Deficit Procedure (EDP)⁶. The Excessive Deficit Procedure is applied to all European Union member states that do not respect the budget discipline imposed by the Stability and Growth Pact.

The procedure is triggered at the moment when the criteria regarding deficit and public debt are no longer fulfilled, thus:

- the deficit criterion, that is the general public deficit is excessive when the reference value of 3% of GDP is exceeded, at market prices;
- the debt criterion – this is activated when public debt is higher than 60% of GDP, and for 3 consecutive previous years it has not decreased at least with 1/20 per year.

Actually, European Commission makes a country report of evaluation of the deficit of the country in question or of its debt that exceeds admitted limits. Following the report, they notify the country considered to have broken the rules of SGP and, at the same time, they inform the European Council about this matter. The European Council, in turn, has the obligation to decide, with a qualified majority, whether the analyzed country has indeed broken the stipulations of the Pact. Triggering the Excessive Deficit Procedure is not immediate and imperative, but would rather follow a series of steps and in case the activation of EDP is voted, the Council will make recommendations and will allow an interval of 3 or 6 months in order to remedy the infringement of the respective provisions.

In case the state against which the Procedure has been activated does not apply the recommendations and does not comply with the demands, European Council will officially notify the respective state and will impose a specific deadline for compliance. Disobeying the Council decision triggers sanctions that will be imposed progressively, following the next algorithm:

- the obligation to constitute an interest-bearing deposit representing 0.2% of GDP in the prevention stage;
- constituting a zero-interest deposit de 0,2% representing 0.2% of GDP in the correction stage;
- persistence in not fulfilling the correction recommendations will make the deposit constituted in the corrective stage turn in a fine of up to 0.5% of GDP.

Along with these sanctions, EU member states may also be affected by sanctions regarding the suspension of agreements and payments out of structural and European investment funds.

It is especially important to add the fact that the above mentioned sanctions are to be applied also in case of discovering manipulations of statistical data.

⁶ Regulation (CE) no.1.467/1997 of European Council of 7th July 1997 regarding the acceleration and clarification of applying the excessive deficit procedure, published in the Official Journal of European Communities, series L, no. 209 of 2 August 1997, with the subsequent modifications and completions.

The final goal of the Excessive Deficit procedure is to raise the awareness of all EU member states upon the strict obedience of budget discipline so as not to get in the position encountered through the „Greece” experiment.

Thus, we may conclude that the budget deficits established through SGP are beneficial in as much as they are used for economic recovery, that is, for investments, but may become sources of instability and growth of deficits themselves when they are used exclusively for consumption.

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CONSIDERATIONS REGARDING THE PLACE AND ROLE OF INFORMATION OPERATIONS CONDUCTED BY LAND FORCES STRUCTURES IN A HYBRID ENVIRONMENT

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Abstract: *We witness a tendency of replacing the conventional threats with the new ones, like threats who can generate hybrid warfare. These threats are materialized by nonstate actors that using different resources and lethal or nonlethal methods act to achieve strategic objectives. The complexity of the new century actions shows us that the new threats generating hybrid conflicts appear in the middle of populated areas where the key terrain is the civil population and affect the political, military, economic and social sectors of the society. The military forces have to permanently adapt themselves to face these new challenges. For this reason, the information operations conducted at all levels of command represent one of the most proper answer to face the new challenges, including the threats generating hybrid conflicts. Taking into consideration the presence of civil actors in this new “battlefield”, the role of civil-military cooperation (CIMIC), part of information operations becomes more and more important succeeding most of the times to get the support of civil population or with another words to win the key terrain.*

Keywords: *hybrid war; hybrid threat; information operations; civil-military cooperation.*

Introduction

Throughout the history, the warfare was characterized by traditional methods in which military forces were directly confronted and they respected rules. In the second half of the 20th century we can speak about new methods of confrontation characterized by dynamism, flexibility, surprise, having a multidimensional character or with another words unconventional/asymmetric war. New threats generating conflicts have emerged and developed and military forces had to permanently find new ways to adapt to these challenges in order to have a proper response.

The hybrid war represents a major challenge because it involves achieving the success on all levels and it is present always in the middle of civil population. Information operations represent one of the proper response of military forces in front of this new challenge and substantially contribute to support the forces in achieving the goals and accomplish the missions.

Taking into consideration the presence of local population in this new hybrid „battlefield”, the role of civil-military cooperation/CIMIC, part of information operations become one of the most important contributing to win what we consider to be the key terrain, the local population. Moreover the civil-military cooperation/CIMIC by specific activities and different projects participate to the establishment of a stable environment so the hybrid threats can be counteracted.

Generalities and concepts

General aspects regarding hybrid war

The complexity of the last year’s actions shows us that besides the traditional methods of war (like we are familiar from the history), new unconventional, asymmetric methods

appeared. The new technologies, researches and discoveries in the warfare sector had an important role and conducted to new threats, among which we can identify the hybrid threats. That is why permanently one of the belligerents generates new ways to gain the superiority or to counteract the new methods implemented by the other side.

The hybrid threats imply the presence of nonstatal actors who using different kind of resources and lethal and nonlethal instruments, new technologies, methods and procedures obtain strategic advantages. These actors will act by third parties in order to influence the political, military, economical, social and information environments.

Studying the new conflicts, we can observe that the hybrid threats tend to replace the traditional methods of warfare and always they act in the middle of populated areas, where civil population is considered key terrain. We are referring to a flexible environment, not very hard to be influenced, especially in areas where the standard of living is not very high and where these threats can be active and obtain the proposed objectives without consuming too much resources like in a conventional confrontation.

The specialists have concluded that the threats with the highest impact will come from extremist groups which, usually, as we know, they choose the future combatants from poor areas, where the population faces a lot of needs.

A threat is considered to be hybrid if „it has three essential elements (multiple capabilities, organisational maturity, expression in a complex field), the enemy of this type being capable to migrate when he desires from unconventional to conventional warfare. He will be capable to engage efficiently the enemy forces, forcing them to fight in an extended confrontation area, using a wide range of capabilities, including cybernetic resources, mass-media, securitized communications, transnational organized crime networks, advanced technology (like drones) and in the future even robots¹”.

On the other side, other specialists consider that the hybrid war is „a combination of symetric and asymetric armed conflicts, where the reaction forces conduct traditional military operations against military forces and enemy targets while they act simultaneously and decisive in order to control the indigenous population from area of operations by stability operations²”.

General aspects regarding information operations

Military forces have to permanently adapt themselves to the reality, to identify new fighting methods and techniques or to counteract against these methods used by the enemy. Part of military operations, the information operations were developed having an important role and representing a force multiplier. Information operations substantially contribute to achieving the success being part of operations at any level of command. They implied a depth analysis, a judicious planning of available specialized resources, as well as a very precise coordination in order to get the expected effects. They represent one of the most proper answer to face the new challenges, including the hybrid threats.

According with the national legislation, the information operations „involve three main types of activities:

- a) influencing activities;
- b) activities focused on countering command function and capabilities;
- c) information protection activities³”

¹ Colonel dr. Valerică CRUCERU, „Despre conceptul de război hibrid în gândirea militară americană”, in: *Buletinul Universității Naționale de Apărare “Carol I”*, București.

² Col John J. McCuen, USA, Retired, *Hybrid wars*, Military Review, March-April 2008, United States Army Combined Arms Center, Fort Leavenworth, Kansas

³ S.M.G./C.O.-10.0. *Doctrina operațiilor informaționale*, București, 2011.

Influencing activities represent those activities „concentrated on changing or reinforcing perceptions and attitudes of adversaries or potential adversary and neutralizing his propaganda⁴”.

Information operations involve a continuous planning, coordination, synchronization and execution of informational activities in order to get the expected results and to affect/influence the will, capacity of perception and understanding of the enemy.

Information operations in land forces

Missions and operations conducted by land forces

Land forces represent the main component of Romanian Armed Forces, contributing substantially to the fulfilling the missions and being able to participate to domestic operations or abroad, independent, joint or combined.

According with White Defense Charter of Romania, „general missions of Romanian Armed Forces are:

- a) contribution to security of Romania on peacetime;
- b) defend of independence, suzerainty and integrity of Romania;
- c) participation to allies defense and partners in NATO and EU;
- d) promotion of regional and global stability, including the use of defense diplomacy;
- e) support of central and local public administration, in emergency situations, by providing assistance to the population and manage the disasters consequences and technological accidents⁵”

Land forces develop or participate to different kind of operations according with their role and missions, being a flexible force, adaptable to the new realities of modern battlefield and having multiple possibilities to respond at different type of threats.

There are several criteria of organising the operations where land forces are involved, but I would like to speak about classification according with their nature and content. In accordance with this, “land forces develop or participate at the following types of operations: operations specific to combat (two main types – offensive and defensive); stability and support operations; intermediary operations⁶”.

Informational objectives can be achieved by using kinetic and nonkinetic means and generate lethal and nonlethal effects. There is a concern regarding the development of nonkinetic activities with nonlethal effects and information operations focus, mainly, on this kind of activities.

The operations develop or in which land forces are involved can be in one of the following stages: peacetime, crisis situations, wartime and postconflict.

Information operations in land forces

Information operations represent a function of the staff at any level to analyse, plan, integrate and develop informational activities in order to get effects on understanding and will capacity of the enemy. Information operations, part of operations developed by land forces structures, are present in modern battlefields and represent a pool of informational activities according with ten areas nominalized by NATO. NATO Crises Response System represent that system which ensure the state of preparedness and support in order to achieve the prevention and crises management. According with this, the areas of information

⁴ S.M.G. 90 *Manualul operațiilor informaționale*, București, 2013.

⁵ Carta Albă a Apărării, România, 2015.

⁶ Gen brig (r) prof univ dr Costică ȚENU, Col (r) prof univ dr Lucian STĂNCILĂ, Lt col lect univ dr Doru ENACHE, *Fundamentele întrebuițării forțelor terestre în acțiunile militare moderne, curs de artă militară*, București, 2005

operations are: psychological operations; influence by presence, posture and profile; operations security/OPSEC; information security/INFOSEC; deception; electronic warfare; physical destruction; operations in information network; civil-military cooperation/CIMIC and public information⁷.

Information operations in land forces are planned and coordinate by Nonlethal Operations Section. Information Operations Coordination Board/IOCB represents the structure responsible with implementation of informational campaign materialized by information operations. IOCB ensures consistency and continuity of activities in information operations area and synchronization with military actions. IOCB is conducted by chief of nonlethal section and is consisted by specialists in psychological operations, CIMIC, intelligence etc

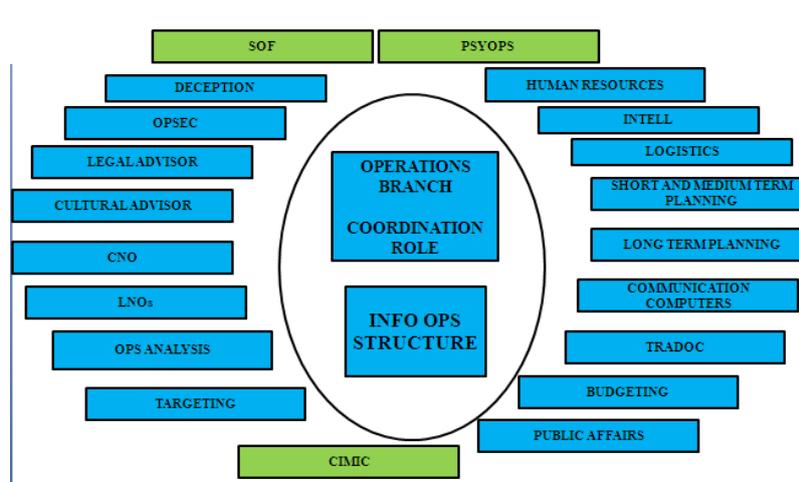


Figure no. 2.1. General organisation of IOCB

As specialized units on this field, under land forces command, there is 1st CIMIC Battalion coordinated by CIMIC Office/Nonlethal Operations Section; the other specialized structures having different chain of command. As well, the section coordinates the activity of subordinated structures in information operations area to implement the directives, decisions and orders received from higher echelons.

CIMIC Support

Civil-military cooperation/CIMIC represent the interface between military forces and what we call „civil actors”, meaning central, regional and local authorities, international, governmental, nongovernmental and private volunteers organizations and last, but not in the least, local population.

The key functions of CIMIC are:

- a) civil-military liaison;
- b) support of civil environment;
- c) support to the force⁸

CIMIC structures develop mission on peacetime, crisis situations – in Romania or abroad, on war and post-conflict.

1st CIMIC Battalion, specialized structure in land forces, represents the execution element on CIMIC field, which establish and maintain the full cooperation between military commander and authorities of local public administration, civil population and governmental,

⁷ AJP-3.10, *Allied Doctrine for Information Operations*, 2009

⁸ S.M.G./P.F.A.-5.2 *Doctrina pentru cooperarea civili-militari (CIMIC)*, București, 2013.

nongovernmental, international and private volunteers organizations from his area of operations. In order to promote stability using other instruments than warfighting and to support local authorities and civil population from his area of responsibility, in civil emergency situations, the battalion has deployable subunits and nominated elements to execute missions in collective defense operations and crisis response operations, acting in actions and military operations in operational structures or under command of Land Forces Staff.

In order to achieve the goal of civil-military cooperation there are necessary specialized forces organized and dimensioned according with the nature of mission. The way of augmentation/support of different structures with CIMIC elements is different according with the type and objectives of the mission. The commanders of augmented/supported structures use, in principle, the CIMIC elements like interface with civil environment during the planning process and conducting the operations.

The CIMIC elements will be involved by the augmented/supported structures in actions to assess the civil situation from their area of operations, to estimate the probable evolution of specific factors of civil environment and to establish and maintain the permanent contact with the civil actors – local authorities, civil organisations and local population. Also the CIMIC elements can act to accomplish CIMIC projects in support of civil environment according with operational requirements ongoing or planned to be conducted in the next period of time.

The CIMIC elements realize the assesment of a city/village or an area. The purpose of these assessments is to realize a database with the main factors of civil environment and of the civil situation from area of responsibility. The assesment involves the collection of data about the necessity of local population and the evolution of civil environment from the area.

The CIMIC elements conduct activities of liaison with civil actors (international, governmental, nongovernmental and private volunteers organisations, central, regional and local authorities and civil population). In some areas according with the culture, the engagements of the females will be realized with a specialized CIMIC element, called FET (Female Engagement Team).

When it is necessary, the CIMIC elements plan, organize and realize distribution of humanitarian assistance items and medical assistance or cooperate with the civil actors for this reason.

In order to support the military force and the civil environment, but just in support of the operations, the CIMIC elements identify, initiate and implement quick impact projects.

The CIMIC elements participate to analyse the factors of operational framework/PMESII-PT: P=political, M=military, E=economic, S=social, I=information, I=infrastructure, P=physical environment, T=time, very useful like I have presented at the beginning of this article. The status of those eight factors will be presented using the following code: green – pro military force, yellow – neutral, red – against military force and the trend will be marked to be ascendent, descendent or stagnant.

Also, according with the operational situation, in order to eliminate the interference with the ongoing operations, the CIMIC elements cooperate with civil actors to organize a DPRES Centre (displaced persons, refugees and evacuees).

A DPRES Centre is destined to offer shelter and support for displaced persons, refugees and evacuees. We can include in this category those persons deployed in their own country and those who passed the border and received the status of refugee from United Nations High Commissioner for Refugees/UNHCR.

Also, the CIMIC elements participate to monitor and analyze the informational environment and to the identification of potential threats in terms of aggressive politics characteristics to the hybrid war. On specific areas of activity, the products will be organized

in a database which is updated and analyzed permanently in order to identify vulnerabilities and to establish methods to counteract.

CONCLUSIONS

Even if the objectives of informational operations can be achieved by kinetic and nonkinetic means, generating lethal and nonlethal effects, there is a highly interest to conduct activities mainly nonkinetics with nonlethal effects.

The civil-military cooperation represents an important sector of informational operations contributing substantially to the way of accomplish the missions of augmented/supported structures. CIMIC claim multilateral and integrated application of all means of power, military and non-military in order to produce effects in support of planned results. The goal on long term is to develop and sustain the conditions that contribute to a solution resistant to a crisis.

One aspect which can be take into consideration is the increase the importance of these types of activities/operations, especially in environment with hybrid threats, realizing the force multiplier role of these and the fact that one small elements composed by specialists in informational operations can have important results and avoid the confrontation of military structures which can record important losses and consume resources.

From my point of view, in the future it is necessary to be analyzed the possibility to combine these types of informational activities/operations in order to maximize the effects and, of course, to avoid, limit and counteract the risks.

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DIFFICULTIES IN ATTRACTING THE EUROPEAN FUNDS IN THE PROGRAMMING PERIOD 2007-2013 AND 2014-2020 AND PROPOSALS FOR SOLUTIONS TO OVERCOME THEM

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Abstract: *Communication has been divided into 4 chapters: Stage of European funds absorption in the EU and Romania in 2007-2013 and some aspects of preparing the projects implementation of these funds in our country for 2014-2020; The main difficulties encountered in attracting European funds in the period 2007-2013 and decided to start projects for the period 2014-2020; Possible solutions to improve the absorption of the European funds in projects for the period 2014-2020; Conclusions; Bibliography.*

Keywords: *control; financial instruments; beneficiary; eligible expenditures; financial allocations; European funds absorption.*

Stage of European funds absorption in the EU and Romania in 2007-2013 and some aspects of preparing the projects implementation of these funds in our country for 2014-2020

Very important for our scientific approach are some concepts that we want to be clarified, in accordance with the approaches of reference of European and national legislation in the field of EU funds, such as control; financial instruments; beneficiary; eligible expenditure; financial allocations; absorption of European funds.

1) “Control”¹ means any measure taken to provide reasonable assurance regarding the effectiveness, efficiency and economy of operations, reliability of information, protection of the assets and information, prevention, detection and correction of fraud and irregularities and their monitoring, as well as the good management of the risks related to the legality and regularity of underlying transactions, taking into account the multiannual character of the programs and the nature of those payments; controls may involve various checks and implementing any policies and procedures to achieve the objectives mentioned in the first sentence;

2) “Financial instruments”² means the Union measures of financial support provided from the budget, on a complementary basis, in order to achieve one or more specific policy objectives of the Union; these instruments can take the form of capital or quasi-capital investments, loans, guarantees or other risk sharing instruments and they can be combined with grants, if it is necessary;

¹ Definition is set out in Regulation (EU, EURATOM) No. 966/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Regulation (EC, Euratom) No. 1605/2002 of the Council, published in the Official Journal of the European Union, no. L298 of 26 October 2012, p.18;

² Definition is set out in the same Regulation mentioned above at p.18

3) “**Beneficiary**”³ means a public or private body solely for the purpose of EAFRD regulation and the EMFF regulation, a natural person responsible for initiating and implementing the operations, within the context of State aid in the context of the financial instruments from the second Title IV of the Financial Regulation of the EU; it also means the body that implements the financial instrument or fund of funds, where appropriate;

4) To be **eligible, the expenditure**⁴ must fulfil cumulatively the following general conditions:

a) to be employed by the beneficiary and paid by it, under the law, between 1 January 2014 and 31 December 2023, respectively from 1 September 2013 and 31 December 2023 for the expenditure incurred in the operations financed by Initiative on Employment among Youths, respecting the implementation period established by the managing authority by agreement/ decision/order of financing;

b) to be accompanied by invoices issued in accordance with the national law or the state where they were issued or other accounting documents on which records payment obligation and evidence concerning payment and the reality of the expenditure incurred, that offers the possibility the expenditure to be checked/controlled /audited in compliance with art. 131 par (2) and (4) of Regulation (EU) no. 1.303/2013;

c) To be in accordance with the program;

d) to be in accordance with the agreement /decision / financing order, agreement between the managing authority or the intermediate body and beneficiary, in compliance with art 65 par (11), art 70, art 71, art 125 par (1) and art. 140 of Regulation (EU) no. 1.303/2013;

e) To be reasonable and necessary to achieve the operation;

f) To comply with the EU legislation and the national rules;

g) To be registered in beneficiary's accounts, in compliance with art. 67 of Regulation (EU) no. 1.303/2013;

5) “**Financial allocation**” represents the net amount allocated to finance the operational programs that have worked in 2007-2013 and it will be implemented in the new programming period (2014-2020);

6) “**Absorption of European funds**” means the amounts received by Romania from the European Commission from those divided to our country from the structural and cohesion funds which have been allocated in a programming period (such as 2007-2013 which ended) .

For beginning, we refer to allocation of the structural funds on the EU member states compared to post-accession programming periods 2007-2013 and 2014-2020.

Stage of European funds absorption in our country was the subject of analysis of government authorities European and Romanian (European Commission, the Romanian Government, Ministry of European Funds, the Romanian Academy, other research and education institutions; auditing leading international companies - KPMG⁵);

³ Definition is set out in REGULATION (EU) No. 1303/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 December 2013 for establishing the common provisions on the European Regional Development Fund, European Social Fund, Cohesion Fund, European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund as well for establishing the general provisions on the European Regional Development Fund, European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Regulation (EC) no. 1083/2006 of the Council, published in the Official Journal of the European Union, no. L347 of 20 December 2013;

⁴ Definition is found in the Government Decision no. 399/2015 on the rules for eligibility of expenditure incurred in the operations financed by the European Regional Development Fund, European Social Fund and the Cohesion Fund 2014-2020, published in the Official Gazette, Part I no. 413 of 11 June 2015;

⁵ We consider the following documents: 1) National Strategic Report 2012 on the implementation of the Structural and Cohesion Funds, the Romanian Government, 2013; 2) The report “The implementation of the provisions in relation to the ex-ante conditionality’s during the programming phase of the European Structural and Investment (ESI) Funds, Directorate-General for Regional and Urban Policy”, European Commission,

For beginning, we bring into attention from the countless analyzes made in this respect on the stage of absorption of EU funds in the EU and Romania in the period 2007-2013 and what is configured for 2014-2020, the one made by a group of researchers from the Romanian Academy⁶, of which we present below, some ideas and some important conclusions.

Regarding the allocation of the structural and cohesion funds approved to the 28 Member States of EU-28 for the period 2007-2013, this has amounted to 308 billion euro, which represented approximately 35% of the EU budget, worth 862 billion euro. Financial allocations for the Operational Programmes (OP) in Romania are summarized in Table no.1, for the period 2007-2013, and in Table no.2 for the period 2014-2020.

Table no.1: Financial allocations related to the Operational Programmes in Romania, 2007-2013, for the convergence objective

Operational Programmes 2007-2013	Fund/Instrument	Allocation 2007-2013 (euro)
Environment Sectoral Operational Programme (SOP Environment)	ERDF + CF	4,412,470,138
Transport Sectoral Operational Programme (SOP Transport)	ERDF + CF	4,288,134,778
Regional Operational Programme (ROP)	ERDF	3,966,021,762
Sectoral Operational Programme Human Resources Development (SOPHRD)	ESF	3,476,144,996
Sectoral Operational Programme Increase of Economic Competitiveness (SOP IEC)	ERDF	2,536,646,054
Operational Programme Administrative Capacity Development (OPACD)	ESF	208,002,622
Operational Programme Technical Assistance (OPTA)	ERDF	170,237,790
TOTAL		19,057,658,140

Source: data available on the website of the Ministry of European Funds

It may be noted that operational programs that have had the greatest financial allocations through Structural Instruments of the financial framework 2007-2013 were Sectoral Operational Programme Environment and Transport Sectoral Operational Programme, namely the programs that implemented the major projects whose value exceeds 50 million.

Table no. 2: Financial allocations related to the Operational Programmes in Romania, 2014-2020

Operational Programmes 2014-2020	Fund ESI/Instrument	Allocation 2014-2020 (euro)
Operational Programme dedicated to the major infrastructure (Transport and Environment)	ERDF	2,483,527,507
	CF	6,934,996,977

2016; 3) Progress Report 2007-2015 of the KPMG on the EU Funds in Central and Eastern Europe, 2016; 4) other materials taken from <http://www.fonduri-ue.ro/>

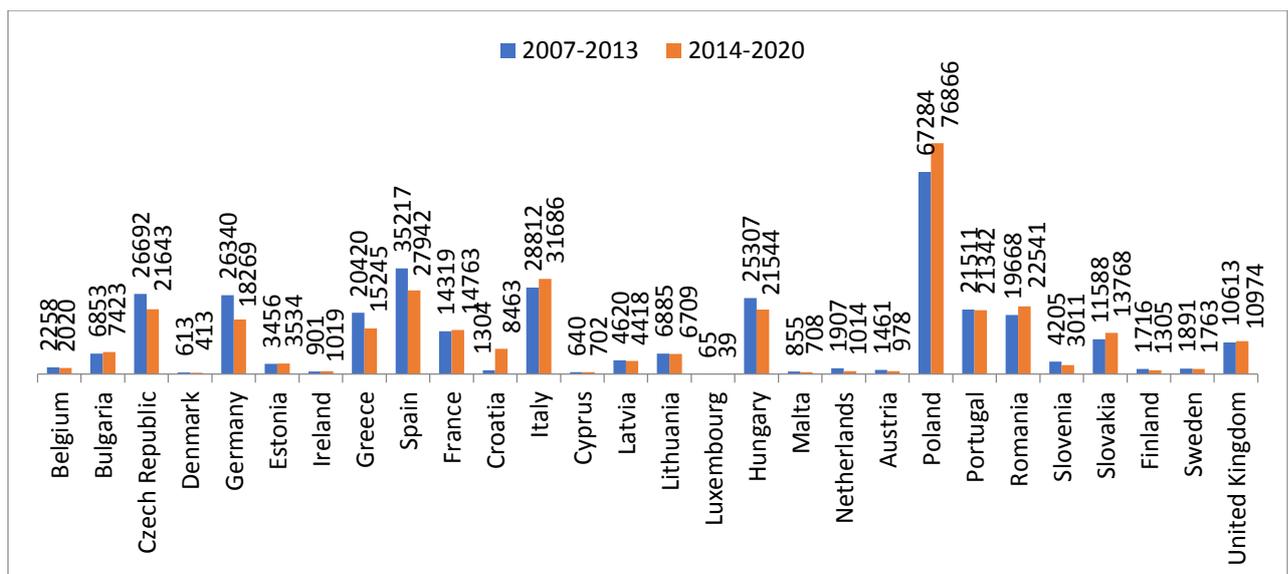
⁶ Research entitled COHESION POLICY INSTRUMENTS. ABSORPTION SCF 2007 - 2013 AND ESIF 2014 - 2020 ON THE EU COUNTRIES by the authors: Mariana-Camelia ȚĂRANU- Researcher, Institute of World Economy, Romanian Academy; Victoria FOLEA- III Senior Researcher, Institute of World Economy, Romanian Academy and the Romanian-American University; Cristinel-Claudiu COCOȘATU- III Senior Researcher, Institute of World Economy, Romanian Academy, published by the Romanian Academy in 2016

Operational Programmes 2014-2020	Fund ESI/Instrument	Allocation 2014-2020 (euro)
Regional Operational Programme (ROP)	ERDF	6,700,000,000
Human Capital Operational Programme (HCOP)	ESF + YEI	4,326,838,744
Competitiveness Operational Programme (COP)	ERDF	1,329,787,234
Operational Programme Administrative Capacity (OPAC)	ESF	553,191,489
Operational Programme Technical Assistance (OPTA)	ERDF	212,765,960
Total 1 (Cohesion Policy)		22,541,107,911
National Rural Development Programme (NRDP) (Common Agricultural Policy)	EAFRD	8,015,663,402
Operational Programme for Fisheries and Maritime Affairs (OPFMA) (Integrated Maritime Policy)	EMFF	168,421,371
Total 2		8,184,084,773
Total 1 + 2		30,725,192,684

Source: data available on the website of the Ministry of European Funds

Since the programming period 2014-2020, each Member State has concluded a Partnership Agreement with the European Commission which was approved the coordination of all Structural Funds and European Investment Funds (ESIF) in that country. Allocation of the structural funds on the EU member states, compared to the post-accession programming periods 2007-2013 and 2014-2020, is shown in Figure no. 1.

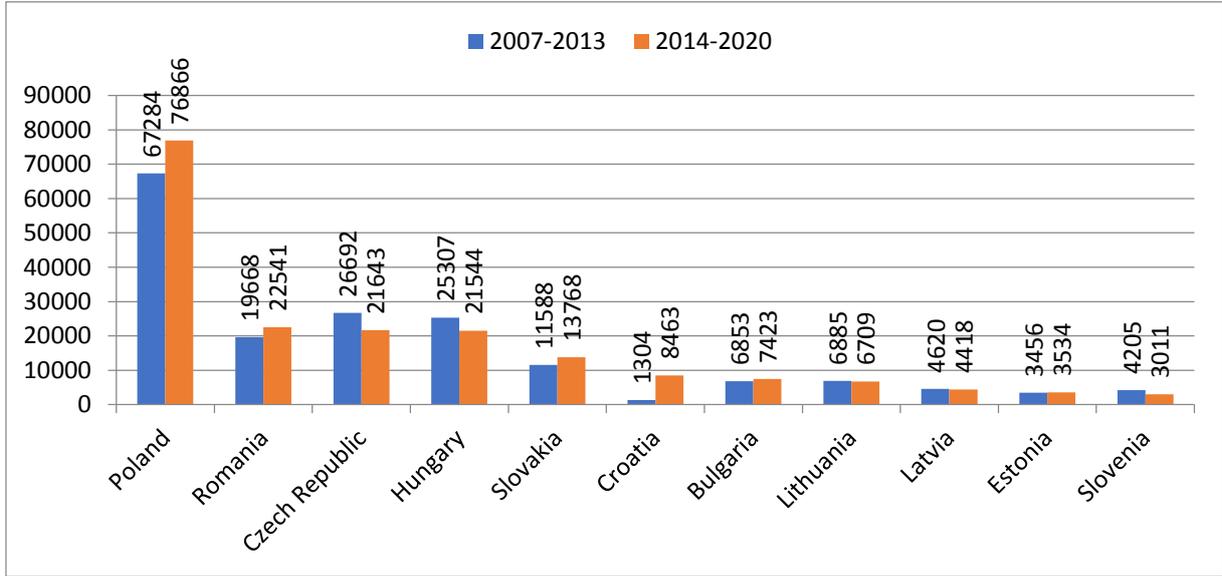
Figure no. 1: Financial allocations for Structural and Cohesion Funds (SCF) 2007-2013 and European Structural and Investment Funds (ESIF) 2014-2020 (Cohesion Policy) - thousand euro



Source: interpretation according the website http://ec.europa.eu/regional_policy/en/funding/available-budget/

In the chart above we can see that Poland is the biggest beneficiary of ESI funds in the both programming period, respectively 67.2 billion euro in 2007-2013 and 76.8 billion euro in 2014-2020; these amounts representing over 20% of the total budget of the 28 EU Member States. On the following places, as the average allocation of the 2 programming period, are in the order: Italy, Spain, Czech Republic, Germany, Hungary and then Romania. The fewer funds were allocated to Luxembourg as of the chart above. Among the countries of Central and Eastern Europe (CEE), the largest financial allocation in the both periods (2007-2013 and 2014-2020) it was for Poland, 38% and 41% of total for EU countries in the region. In comparison, Romania has had financial allocations of 11% and 12% of total for EU countries in the region in the period 2007-2013 respectively 2014-2020 (Figure no. 2).

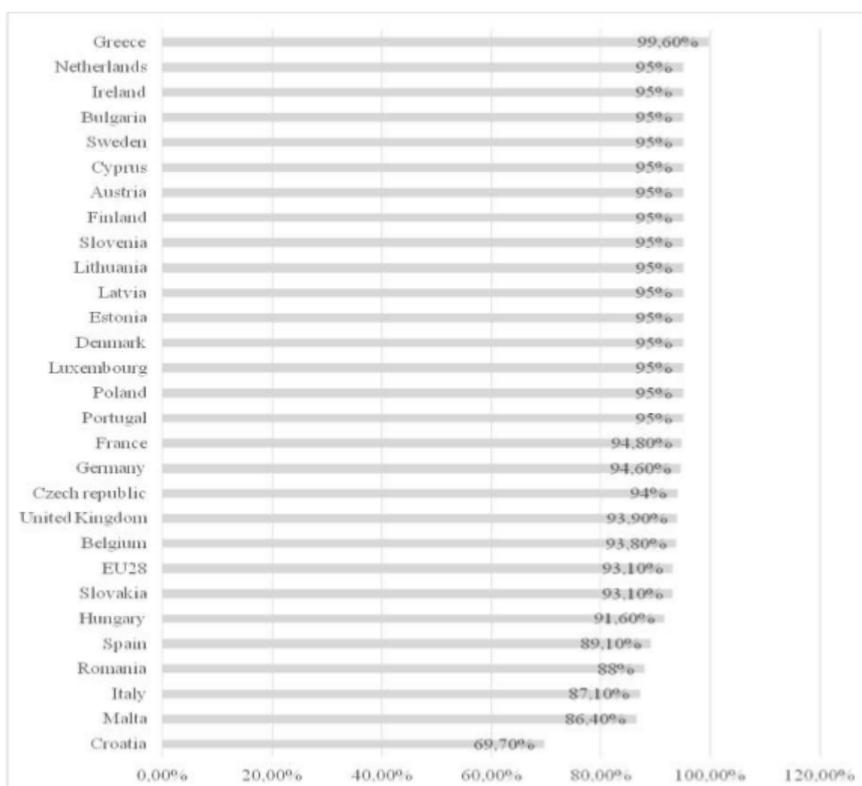
Figure no. 2: Financial allocations for Structural and Cohesion Funds (SCF) 2007-2013 and European Structural and Investment Funds (ESIF) 2014-2020 for the CEE Countries - billion euros



Source: interpretation according the website http://ec.europa.eu/regional_policy/en/funding/available-budget/

Next, we will present from the same study of the Romanian Academy researchers, some aspects of stage of the structural funds and investment absorption for the period 2007-2013 in the EU and Romania.

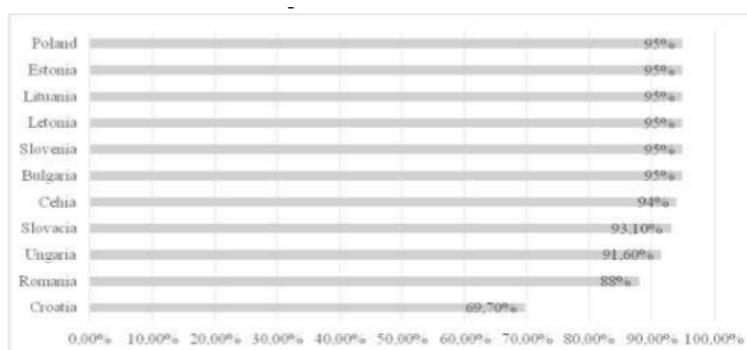
Stage of the Member States absorption from the funds allocated for the period 2007-2013, on the cohesion policy including European Territorial Cooperation, is shown in Figure no. 3.



Source: Data taken and processed (by those of 3 researchers) on <https://cohesiondata.ec.europa.eu>

Regarding the EU Member States in the Central and Eastern Europe region were recorded absorption of 95% for Poland, Estonia, Lithuania, Latvia, Slovenia and Bulgaria (Figure no. 3). Low absorptions, below 90% from the allocated funds were recorded for Romania (88%) and Croatia (70%) (Note: Croatia recorded 70% absorption in one year, respectively 2013, which benefited from the allocation of structural funds and investment) (Figure no. 4).

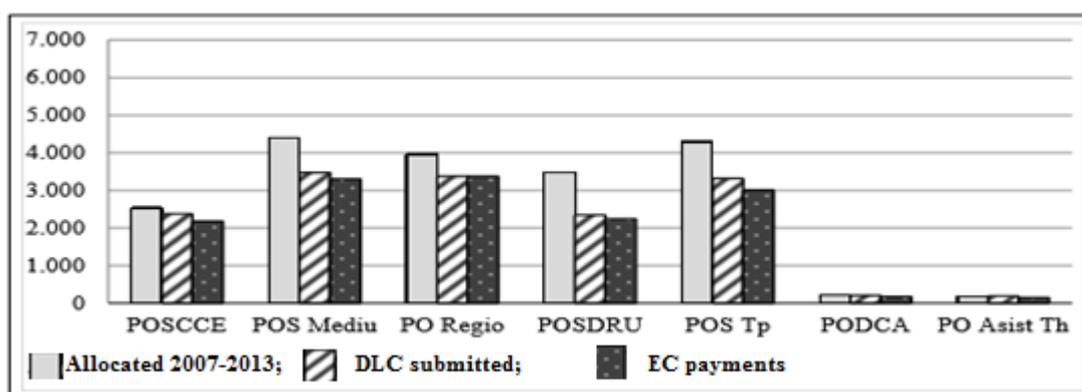
Figure no. 4. Stage of the CEE Member States absorption from the funds allocated for the period 2007-2013.



Source: Data taken and processed (by those of 3 researchers) on <https://cohesiondata.ec.europa.eu>

In Romania the Structural and the Cohesion Funds 2007-2013 have been made available through seven operational programs totalling 19.21 billion euro.

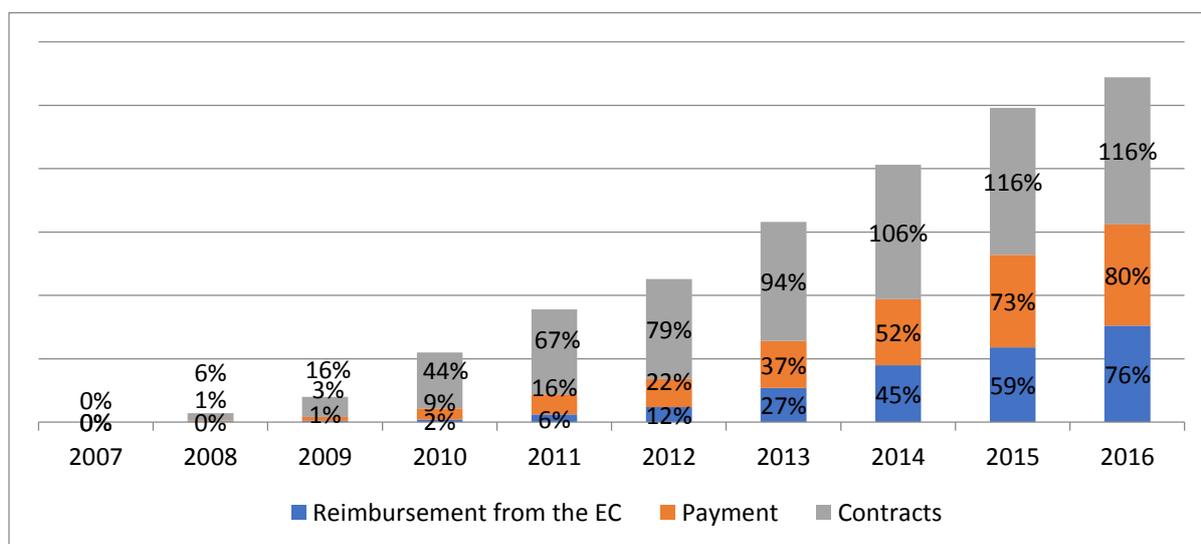
Figure no. 5. Absorption of the OP 2007-2013 in Romania (thousand euros)



Source: Ministry of European Funds - Stage of absorption for the Operational Programmes 2007-2013 resulting on 30 September 2016

Although there has been registered some progress in the last years, Romania has received for the operational programs, repayments of approx. 14.424 billion euro, the absorption rate of the European funds at 30 September 2016, reaching 86.74% of approved funds, including the advances received by the Commission in the amount of 2.105 billion euro. It can be seen from the chart above that the things were a little better at POSCCE, OP Regio and SOP Environment and less good at SOPHRD and POS Tp.

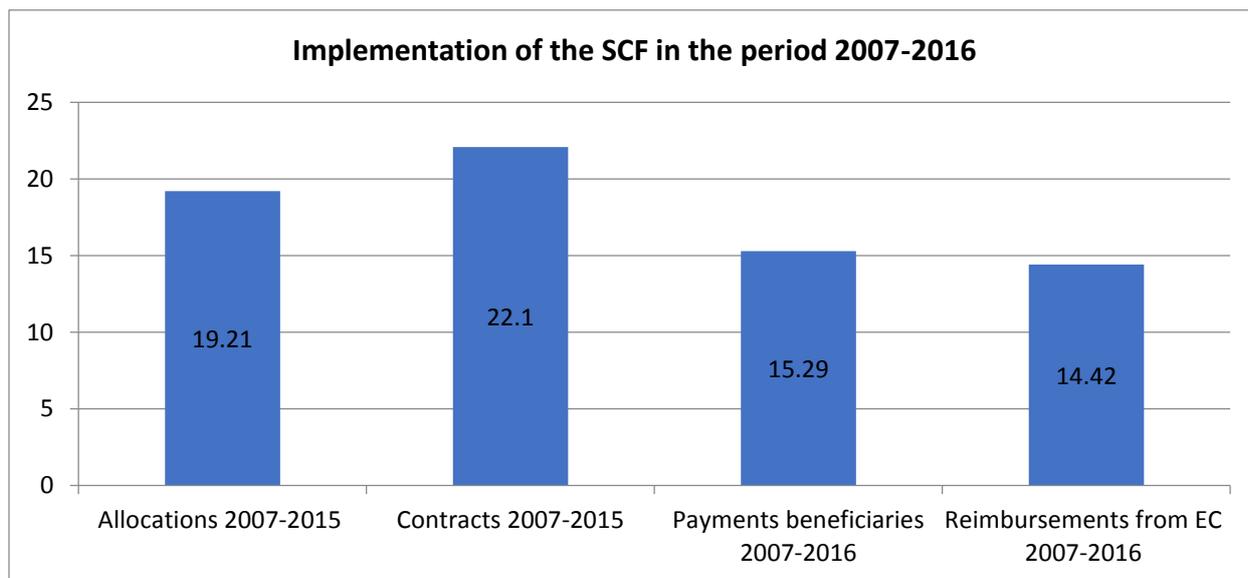
Figure no. 6. Progress in implementing the Structural and Cohesion Funds (SCF) 2007-2013 in Romania (%)



Source: data processing (by the 3 researchers) obtained from Ministry of Public Finances - Evolution of the financial flows between Romania and the EU (net financial balance) and Ministry of the European Funds – Stage of absorption for the Operational Programmes 2007-2013 on 30 September 2016

At this moment, this rate represents one of the lowest rates recorded in Central and Eastern Europe, noting that there is Croatia, the new EU Member State without any administrative experience having regard to its recent accession to the EU since 01 July 2013 and has an absorption rate of 69.7% over the approved financial allocation.

Figure no. 7. Implementing the Structural and Cohesion Funds (SCF) for the period 2007-2016 in Romania – billion euro



Source: Data processed (by the 3 researchers) after the Report of Progress 2007-2015 by KPMG on the EU Funds in the Central and Eastern Europe, 2016

According to the chart above, we can see that were signed contracts worth 22.1 billion euro while repayments received were 14.42 billion euro, difference of 7.68 billion euro represents a potential financial effort covered by the state budget or from the own beneficiaries resources, money that were not refunded by the Commission for various reasons, such as: some of the contracted amounts were not spent, there were finding irregularities in using the funds by the control bodies or amounts not yet been declared to the Commission considering that the management authorities have submitted the final declarations for the rest of the expenses of the operational programs in August and September 2016. The executive estimates on the final absorption rate of the structural and cohesion funds are 85% of the total financial allocations 2007-2013.

Another analysis made on the issue of absorption of EU funds in Romania and the EU and their implications in our country and in other European countries is that of the specialist Soviani Radu⁷, from which we extract only the main conclusions drawn and the proposed solutions by the author of the research:

1) The model calibrated to the economic reality of Romania shows that, if Romania does not further improves the conditions of competitiveness, ease of doing business and limit the effects of corruption on the economic environment, absorbing the European funds will be sub-optimal. Therefore, in the real terms GDP per capita would record a loss for the growth potential of approximately 1,040.82 euro / capita or reported at the level the starting, Romania loses a recovery of 18% compared to the GDP/capita registered in 2010. The absorption in these conditions makes difficult the real convergence towards GDP/capita calculated as the average in the European Union.

2) Another risk factor in limiting the real convergence absorption of the European funds is defined by lack of determination to finance the eligible projects only from the European funds. In fact, some eligible projects are financed from the national budget, results being the two dimensions: a) deepening the budget deficit by incurring the additional costs; b)

⁷ See “An analysis based on assumptions about the multiplier effect of an adequate absorption of the European funds. The effects on the real convergence in Romania”, article published in “Financial Audit” journal, in November 2014, pp.24-35

a lower degree of absorption of the European funds and, therefore, the prospect of lower allocations in the future; therefore, it is strictly necessary that the eligible projects for the EU funding should not be passed for from the budgetary credits, but to have as financing the structural funds.

3) Regarding the allocation of the European funds, it is found from simulations that the maximal effect on convergence is achieved when the European funds are directed to public investment in infrastructure, and the minimal effect is achieved when the European funds are targeted to subsidize the household incomes.

4) When the European funds are directed towards the private investment, the growth scenario is followed, detailed in case of public investment targeting, but the effects are less permanent. This is a result from the fact that, as it is known the private capital depreciates faster than the public infrastructure. However, spending the private investment European funds, unlike the public investment compensates the process of “Dutch disease”. Productivity gains are spreading faster in economics, crowding does not appear in the final goods; the effect would be even better if the funds would be directed entirely to manufacturers of the finished goods.

5) The cumulative effects of the real surplus of GDP/capita compared to the base year (2010) is 12,888.26 euro until the year 2024 (means + 220.4%), while in the calibrated scenario, the cumulative effects of real surplus of GDP/capita compared to the base year (2010) is 7,406.35 euro (+ 127.6%); this means that the effects of the appropriate absorption for a term of seven years bring an extra GDP/capita in the next 14 years, equivalent to the GDP/capita product in 2 years, 2 months and 2 weeks of GDP/capita in 2010) while in the calibrated scenario additional GDP/capita is equivalent to the GDP/capita product in one year, three months and two weeks. Basically, in the calibrated scenario, because the Romania's economic peculiarities (different from Poland) Romania lost almost the equivalent of an annual GDP/capita (11 months) in the period 2010-2024.

Of course, there are other elements and information that could be the subject to submission in this communication, but for reasons of space we cannot do.

The main difficulties encountered in attracting the European funds in the period 2007-2013 and decided to start projects for the period 2014-2020

In this part of communication we will review the difficulties and the problems encountered during the implementation of the Structural Instruments from Romania during 2007-2013, resulting from the views of the professionals who worked (and some still working) in the organizations that have been or are involved in the implementation of the operational programs of the old period (2007-2013) or the current period (2014-2020) or from our own research.

Here it is, in our opinion, the main difficulty in attracting the European funds in the period 2007-2013:

1) Romania's lack of experience in developing the projects from these European funds. Admission Romania in the European Union in 2007, even if the level of infrastructure and policy can be considered a great success, showed that overall individual country was far to face the western approaches of the socio-economic challenges.

Moreover, the willingness of western approaches to the national issues has proved to be rather a sign of multiple frustrations and not the performance positioning against the proposed targets. Lack of experience, both in the political and especially in the economic, has turned Romania more into an easy prey than a credible business partner. The pre-accession period for preparation, which the European Union has granted to Romania and Bulgaria was

not sufficient to change mentalities, even if the legislative and economic level have made serious efforts to harmonize.

2) Non harmonization of the national legislation with Community law. The national legal system generated by the totalitarian society from the communist dictatorship was forced to adapt “*on the fly*” the EU rules, this target being the assessment factor for *admission* into the EU, but the inertia, the old habits, lack of understanding the democratic relationships, particularly as regards the economic law, respect for the human rights and the democratic principles are problems to be solved.

3) Lack of liquidity in the certain moments of the period considered. Faced permanent with the lack of liquidity due to the economic situation extremely fluid generated by the economic downturn (which reached all the EU countries - including Romania), but also because an economic mismanagement without vision in the medium and long term, Romania had to borrow from the International Monetary Fund and by private banks, which did not solve completely the problem, thus entering into a system of “*rolling*” and of the payments transfer. Also, quite a few public and private entities that have implemented projects in 2007-2013 have been forced to take bank loans for completing the projects, because we have not received timely the amounts from repayment or because of cutting them, not infrequently unjustified, of some expenditure incurred, that had to be refunded.

4) Major difficulties in conducting the procedures of Public Procurement. An inadequate legislation to the EU principles regarding the Public Procurement (although has undergone some changes over the period 2007-2013) and Managing the public money, has resulted in application of the hefty financial corrections along the entire implementation period.

5) Changing the rules during the game - Memorandum of monitoring the financial correction, the flat-rate system. Changes and adjustments “on the fly” to situations that were not foreseen in the law and procedures, with major implications for ongoing programs, had as resulted warnings and implementation of the measures from the Commission.

6) The poor quality of the programs proposed for funding. Lack of a strategy linked nationally, focused on creating jobs and added value, led to a chaotic approach of Structural Instruments with financial support of programs without real economic weight.

7) Programs proposed for funding without serious analysis of the need to responding. These cases are the result of lack of correlation between the real needs/ proposed programs.

8) The uneven quality of the personnel employed in the implementation of the Structural Instruments. Poor training of the personnel employed in the conduct of the Structural Instruments led to delays in the programs, with direct influence on the quality of absorption of the funds and with the threat of automatic disengagement.

9) Absorption of funds allocated to that aim without a forecast result in the last years of the old period. In the years 2012-2013, Romania began to face to the reality of the danger for automatic disengagement for the significant amounts not involved in carrying out the projects so began a frenzy of assessments and approvals of projects as aim in itself, without very thorough economic justification, as it would have been normal.

10) The lack of the real measurable performance indicators with GDP impact of the implemented programs. Lack of the real performance indicators has resulted on the one hand from the difficulty of the concept understanding of “measure of the economic performance” and from intention to mask the use of Community money in unrelated interests to the purpose of the projects, which led to lack of economic impact of investments.

11) Strategy mistakes and wrong approaches for the purpose for which they were designed. In fact Romania has repeatedly common mistakes made by the vast majority of the Member States, seeking an “*original approach*” instead of applying the positive experiences of those with significant results (such as Poland).

12) Major economic slippage at the national level manifested by the political class corruption and using for personal or group interests of the “public money”. Such phenomena have had a major impact in the implementation of the Structural Instruments, leading to warnings of poor management, financial corrections⁸ applied to the whole operational programs (the European Commission), temporary suspension of implementation, etc.

Possible solutions to improve the absorption of the European funds in projects for the period 2014-2020

Cohesion policy has been and will remain one of the key pieces of the process of the European integration in the past, present and future. Thus, to achieve regional development has been and will be needed in the future for better governance to ensure the involvement of the socio-economic partners and civil society in order to increase the EU's competitiveness and the solidarity between European regions. Success of the regional policy actions will depend largely in the new period (2014-2020) on the effectiveness of planning and collaboration between authorities that are involved in the projects.

As possible solutions to improve the process of absorption of the European funds in the projects for the period 2014-2020, we might mention the following:

- 1) A reconsideration of policies and investment strategies at all levels;
- 2) A responsible approach of operational programs to apply the principle: the only acceptable financial correction is “*no financial correction*”⁹.
- 3) Establishing for solving of a real list of national priorities in accordance with the *acquets communautaire*;
- 4) A constructive approach on the medium and long term of the socio-economic development;
- 5) Completion of the harmonization the national legislation with the European one as regards the compliance with the European principles;
- 6) Preparing a responsible political class, aiming to maintain Romania in the European Union on an equal footing with the rest of the Member States;
- 7) Preparing of a category of public or private officers, elite managers of the EU funds, with broad and solid knowledge on the spheres of activities for what they are responsible;
- 8) Awareness of the population of the significance of belonging to the European family, of rights and obligations imposed by this new position;

⁸These corrections were made based on Law no. 362/2009 for the approval of the Government Emergency Ordinance no. 64/2009 on the financial management of the structural instruments and their use for the convergence objective, published in the Official Gazette, Part I, no. 800 of 24 November 2009 or on OEFM no. 989 of 29 September 2014 amending and supplementing the Order of the Minister of Labour, Family and Social Protection and of the Public Finance Minister no. 1117/2170/2010 for establishing the eligibility rules and the list of eligible expenses in the operations financed by the Sectoral Operational Programme "Human Resources Development 2007-2013" (for the project SOPHRD) published in the Official Gazette of Romania, Part I, no. 249 of 24 September 2014

⁹In the new period it will be taken into account the provisions of the Government Decision no. 399/2015 on the rules for eligibility of expenditure incurred in the operations financed by the European Regional Development Fund, European Social Fund and the Cohesion Fund 2014-2020, published in the Official Gazette, Part I no. 413 of 11 June 2015; and other regulations that will be approved in this new period of implementation

9) Dissemination of information on the Community contribution, so that the access to the Structural Instruments to be easy;

10) Applying to a new methodology of implementation recommended by the EU Commission, which will involve:

a) Clear definition of a system of flat rate for the indirect costs at the project level;

b) Compatibility of the European regulations and the Commission recommendations with the national rules;

c) Introduction the definition of the direct costs of the operations financed in the national regulations, such as Guidelines for general conditions of the applicants;

d) effective communication system to collaborate of partnership type between the authorities of audit, management, certification in the national interest, whereby each party believing that represents the national interest to attract more funds and to materialize as many useful projects for the country's development and the degree of civilization of the Romanian people (as did the Poles and in the previous cycle of the project implementation);

e) Harmonize the common actions financed from the operational programs;

f) Improving safety and legal implementation for the project promoters;

g) The need for a system of multi-annual budgeting, of which application to provide continuously the co-financing projects from the NEF, sustainability and their impact on the long-term.

11) The need for radical reconsideration of activities of all persons who will work in the new European projects on the upside quality of their work. We regard people in the management teams, implementation or as a support for future European projects (managers, legal advisers, financial responsible, experts of various types, trainers in various professions, accountants, responsible for the human resources, etc.) or they have control attributions or inspection given by the authorized entities to do so (specialists on public external audit of the Court of Auditors, the internal audit public from the profile structures, auditors of the managing authorities of the various operational programs, etc.) or will be acquired for the outsourced financial auditor services or chartered accountant in the future European projects, raising serious quality of the services to carry out more projects and increase the absorption in the new period and recover as much of the already wasted time from the new implementation period (there have already wasted over 3 years of the 7 of the period 2014-2020);

12) Consolidated training of the companies and teams who write projects, to do so in accordance with the requirements of the strategic program of the development of Romania in the next period, which seeks satisfaction, in as good condition, of the interests of the country's development in the new European context. In this respect it is necessary that in addition of the consolidated training of these professionals, to establish the systematic collaboration of them with the management authorities of the future operational programs (by express regulation in this regard) and these specialists to be accepted to a greater extent, as experts in various positions of the project implementation (to participate in the implementation of what they foreshadowed by the various applications of the different successful projects that receive funding);

13) Revise the guidelines with general and specific conditions for the projects already launched and completion as quickly as possible of the guidelines for other projects to be launched in the new period (2014-2020). This revision to be made regarding the provision of more attractive rates (and more in line with tariffs in other EU countries for similar projects)

for the personnel that will work in these projects¹⁰ and simplify the procedures and documents required to justify the expenditure requested at the reimbursement.

CONCLUSIONS

In the current programming period (2014-2020) the rate of absorption of Romania may change its trend toward upward if the political class will change the way of approaching of the economic and social strategies in the medium and long term, in terms of priorities and national interests, if the relevant legislation will be removed from the web of bureaucracy, whether administrative capacity of the Managing Authorities and Intermediate Bodies will increase, if the project promoters will be supported by the relevant authorities in order for successful implementation of all projects funded, renouncing to changing the rules during the game.

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¹⁰ As an example we intend at the guide launched for POCU for the period 2014-2020 (posted on www.fonduri-ue.ro), where tariffs for personnel to work on new projects in the various functions are not only much lower than those charged of other European countries similar to us as expertise and level of development but also lower than the tariffs in our projects carried out in 2007-2013.

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THE CHINESE LANGUAGE - KEY ELEMENT IN THE DEVELOPMENT OF ROMANIAN-CHINESE MILITARY RELATIONS

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Abstract: *Being a world power, China has priorities in the cultural, economical and international security levels, developing its soft power.*

The goal of the Chinese "soft power" concept is represented by the spread of the culture and Chinese language, strengthening the not just the short term dimensions of public diplomacy, but also the medium and long term ones.

In order to obtain the national and international advantages, China had to create a positive image by promoting culture, literature, art and of course the Chinese language among the worldwide countries. Therefore, China needed military and civilian pilings for its public diplomacy - the Confucius Institutes and the military education partnership between China and Romania.

Keywords: *Chinese language, soft power, cultural diplomacy.*

1. Chinese language – used as soft power instrument in Romania

Soft power has played a decisive role, starting in 2008, with the importance granted by the Chinese Government at the international level. The image of the Chinese State, supported by the efforts of the Communist Party and the national media, through educational exchanges, cultural exhibitions, famous companies, Confucius institutes, but also through public diplomacy has managed to enter the global stage. Thus, this branch of diplomacy in order to leave its mark at the cultural level could be achieved only through a sustained effort.

In several high-level meetings, by the former Chinese President, Hu Jintao, and by the Chairman of the Chinese Political Consultative Conference, Mr. Qinglin Jia, it was reiterated that China's efforts should be directed towards the concept of soft power. Reasons for popularizing this concept could be represented by the need to reiterate the threat level over China, but also ensuring the other states regarding the actions of peaceful nature of China, being in a continuous growth. Thus, soft power of China becomes part of the culture, ideologies and strategies of this country.

Considered worthy is the statement of the Prime Minister of Singapore, Lee Kuan Yew, referring to the concept mentioned above: „soft power is obtained only at the time that the Nations will take over and he admired aspects of a civilization to other Nations”¹. Thus, when a state becomes a model for other international actors, soft power diplomacy has achieved a major task.

Cultural diplomacy is marked by the use of Chinese language in different areas in Romania being “a tool and a way to relate to the outside world”².

By promoting culture, using diplomacy, the results obtained are mutual awareness of the values and cultural roots. Thus, this awareness gives rise to an interaction between different actors and non-state actors, through activities and events aimed to promote the culture.

¹ Lam Pin Foo, ‘Only the Tang Dunasty Came Close to Having Influence’, *The Straits Times*, 26 October 1996.

² J. Gienow-Hecht, M. Donfried, *Searching for a Cultural Diplomacy*, Berghahn Books, Oxford, 2010, p. 36.

Another definition of cultural diplomacy is “the exchange of ideas, information, art and other aspects of culture, between Nations and their own citizens in order to increase the level of mutual understanding”³, the aim being the gathering of people from many different states in order to be able to learn about the defining elements of culture and also traditions.

Former director of the Bureau of information of the Chinese State Council asserted that “China’s public diplomacy task is to introduce China to the world and to help foreigners understand the real China”⁴.

Analyzing China’s priorities on certain fields, after political and economic pillar, the third pillar in Chinese diplomacy is the promotion of Chinese language and culture.

According to the 11th five-year Plan of the Communist Party is expected “a much greater presence of China on international cultural markets”⁵, the aim being the promotion at international level of Chinese culture, and the linguistic factor, through the exchange of cultural and commercial type and network consulting for various companies.

The goal of the concept concerning the attraction of symbols, cultural norms and specific assets of each country is achieved through „the ability to get what you have proposed, through attraction”⁶. Thus, at the direction of political will which is heading the strategic level is the ideology, diplomatic behaviour, but also the culture.

According to the statement of the one who „gave birth” to this concept, Joseph Nye, soft power of Chinese development was achieved through the strengthening of the role of Chinese culture, economic growth in a cost-effective manner, but also through the qualified peace degree in the world⁷. The advantage of cultural diplomacy of the People’s Republic of China (PRC) is conferred by the perception of both internal and external, more specifically a single nation that has both a common culture and traditions. In other words, the PRC „gains sympathy internationally through the Chinese language, Buddhism, philosophy, movies, music, sports and tourism”⁸.

The role of the PRC actions at the global level, for the dissemination of culture is represented by the image of the nation model, responsible, and most importantly, confidence, to other parts of the world scene. Such actions are those such as the signing of cultural cooperation commitments, at least 1360 annual cultural exchanges, the existence of over 752 executive plans for cultural exchanges with 145 countries, with approximately 1000 of international cultural organizations, the cultural sections opening within the embassies⁹.

The Romanian-Chinese cooperation in the field of education

Bilateral exchanges and cooperation between the two countries in political, economic, cultural and educational area represented the promotion of Confucius institutes activities hold in Romania. Chinese initiative - ‘the Economic Belt along the new Silk Road’ and ‘Maritime Silk Road of the 21st century’, aims the cooperation, mainly between the PRC and the rest of Eurasia, Romania having a major role because of the good relationship with China.

³ M. Cummings, ‘*Cultural Diplomacy and the United States Government: A Survey*’, *Cultural Diplomacy Research Series*, Vol. 1, Center for Arts and Culture, 2003, p.73.

⁴ Q. Zhao, ‘*The Necessity for China to Strengthen Public Diplomacy*, *Journal of Shenyang Normal University*’, Social Science Edition, vol. 33, nr. 6, 2009, pp. 1–2.

⁵ ‘*Minister of Culture Sun Jiazheng: Enhance Ability of Helping the Chinese Culture to Go Out to the World*’, <http://www.jxwhsc.com/gzck/show.asp?id=477>.

⁶ Joseph S. Nye, Jr., ‘The misleading metaphor of decline’, *The Atlantic*, March, 1990, p. 13.

⁷ ‘*China Increasingly Attractive to Others*’, *China Daily*, August 8, 2006, p.7.

⁸ Lai Hongyi, *China’s Cultural Diplomacy: Going for Soft Power*, EAI Background Brief No. 308, 2006, p. 37.

⁹ ‘*Outline of the Program for Cultural Development during the National Eleventh Five-year Plan*’, <http://www.chinanews.com>, September 13, 2006.

Obviously knowing mother language of the partner country represents an extraordinary advantage partner in creating and substantiating of the bond between the two countries, known as the 'bridge' concept in the Chinese culture.

Following the official visit in Romania from 2013 of the Chinese Prime Minister Li Keqiang, were signed various cooperation agreements, being opened new 'Gates' between the two countries. The alert economic development of the PRC is a solid argument for learning Chinese. From the economic point of view, we appreciate the Chinese as being the most spoken future language. However, learning Chinese is a real challenge, especially for Slavic countries, because of the completely different alphabet from the Chinese one.

Confucius Institute's role in promoting the Chinese language

In order to promote culture, since 2004, under the auspices of the Chinese Ministry of education, the Office of the Chinese language Council International, began to be establish Confucius Institutes, the first being the one in Seoul.

Alliance Française, the Goethe Institute and the British Council, represents some of the institutions that have been taken as a model by the Confucius Institutes. Currently, in 108 countries, more than 480 institutes have been opened¹⁰, to promote both the Chinese language and culture.

Among the objectives of these institutes are included 'the correct understanding of China by the whole society' and the formation of 'positive opinions about the PRC in global framework'¹¹. Activities are such as cultural events, exhibitions, conferences, and last but not least the Chinese language courses.

As a result of the cooperation agreement between the University of Bucharest and the Hanban-Headquarters of Confucius Institutes, on 22 November 2013, the Confucius Institute at the University of Bucharest was opened.

Following the visit to the University of Bucharest of a delegation from the Political and Legal Studies in China in 2011, were negotiations for its foundation. Discussions were held for the institutional cooperation between the two universities, being proposed the idea of founding the Confucius in Bucharest¹².

According to the official website of the organization, Confucius Institute focuses its activities on the promotion of Chinese language teaching through specific activities, as well as through various cultural activities, organizing courses for both the host university students and the general public, offers a plethora of scholarships, the development of common research projects¹³.

The impact of these institutes worldwide is different, which is viewed with skepticism or delight by the international community. Starting from an instrument of public diplomacy¹⁴, cultural diplomacy¹⁵, especially as a 'soft power' strategy¹⁶, Confucius Institutes were characterized as being true instruments of propaganda¹⁷ or even 'cultural Crusades'¹⁸.

Although controversy regarding their role will not cease to appear, cannot be diminished the importance of institutes as focal point in promoting Chinese language and

¹⁰ <http://www.confucius.ucla.edu/about-us/confucius-institutes-worldwide>

¹¹ M. Siow, *China's Confucius Institutes: crossing the river by feeding the stones*, Asia Pacific Bulletin, n 3. 91, 6 January, 2011, pp. 1–2.

¹² <http://confucius.unibuc.ro/>

¹³ <http://confucius.unibuc.ro/>

¹⁴ D'Hooghe, I. 'The Rise of China's Public Diplomacy', Clingendael Diplomacy Papers, no. 12, The Hague, Netherlands Institute of International Relations, Clingendael, 2007, p.90.

¹⁵ S. Anholt, *Places: Identity, Image and Reputation*, Palgrave MacMillan, New York, 2010, p. 67.

¹⁶ J. Gil, 'China's Confucius Institute Project: Language and Soft Power in World Politics', *The Global Studies Journal*, vol. 2, no. 1, 2009, p. 59.

¹⁷ A.Brady, *Marketing Dictatorship: Propaganda and Thought Work in Contemporary China*, Rowman & Littlefield, Lanham, US, 2008, p. 34.

¹⁸ N. Young, *The Cultural Crusades*, *New Internationalist*, 2009, p. 8.

culture worldwide. At the same time, the institutes are not a passive response of Western cultural dominance, but a 'proactive expansion for changing China's image'¹⁹.

Cooperation at the military area between education institutions from Romania and PRC

In the military education environment, were made efforts to achieve partnerships between Romania and PRC, Chinese language having the vehicle role of achieving the goals. Thus, within the National Defence University in Bucharest, will be organized Chinese language courses, intended for Romanian institutions with staff duties in the field of national security²⁰.

Romanian-Chinese cooperation in the military area was based on the exchanges of experience, mutual training activities between the two systems. A relevant example for this case is the exercise 'Friendship Action', which took place in Hunedoara Country in 2009²¹, and the mutual, on the Chinese territory during 2010.

The interest of PRC to promote Chinese languages in military institutions from Romania is revealed by the initiative to donate a laboratory for teaching modern Chinese, intended by The Chinese People's Liberation Army.

At the same time, the importance of this event was given by the representation level of the Chinese military personnel assigned to come in Romania, marking a new cooperation in the field of education. At Bucharest was present General Ma Xiaotian, Deputy Chief of the General Staff of the Chinese Army.

The year 2009 marked the beginning of Chinese language courses within National Defence University in Bucharest, being intended 'firstly for military and civilian personnel from institutions involved in security and national defence. Chinese language course is added to those of English, French, German, Arabic, Turkish, Russian, Modern Greek and Romanian language for foreign officers'²².

The objectives of cooperation in the military education environment are based on the following considerations:

- Organizing as much as many exchanges of experience aimed to strengthen bilateral relations;
- In the case of organizing specialized courses in its institutions, that host country must be able to ensure all necessary conditions for the preparation of military personnel from that country partner;
- Development the ability to manage resources allocated for international activities by the host country;
- By using other equipment partner country can capitalize certain knowledge in that area in order to implement them and develop their own equipment;
- Teaching foreign military leaders how to manage the defence resources as efficiently as possible.

CONCLUSIONS

Living in a world where globalization becomes increasingly significant, the possibility of a solitary, isolated state on the world stage, we appreciate as being extremely difficult, unfeasible. Therefore, two defining elements that should characterize any state policy would be cooperation between states and interconnection.

¹⁹ Chen, Q. & Zheng, G., *From 'China Year' to 'Confucius Institute' - Cultural Communication and the Deterritorialisation of China's Image*, *Journal of China University of Petroleum*, Edition of Social Science, vol. 23, nr. 1, 2007, p. 74.

²⁰ <https://www.unap.ro/ro/evenimente/curschina.html>

²¹ http://www.mapn.ro/cpresa/13561_INFORMA%C5%A2IE-DE-PRES%C4%82

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CHINA AND ROMANIA CYBER SECURITY POLICY

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Abstract: *Cyber-attacks had become one of the most important threats for states security. The effects have significant damage in the economic area, but also in the intelligence and military fields. Both Romania and China assign a great concern to the cyber domain due to the colossal impact of a possible weak in security systems. China's security policy in cyberspace is closely linked to the military and is based on economic development and national defence strategy. The 'White Paper on military strategy' states that the Chinese army has the ability to protect national maritime interests and security abroad and in cyberspace. Regarding Romanian- Chinese relations, China officially recognizes the importance of international cooperation in cyberspace, as it provides the impetus for a partnership based on mutuality and respect, as well as multiple mutual benefits.*

Keywords: *cyber attack, military strategy, cyber security.*

Motto: *„The potential for the next Pearl Harbour could very well be a cyber-attack”*

(Leon Panetta, ex Secretary of Defence and Director of the CIA)

The imminence of cyber attacks at international level

The alarming increase of cyber attacks, of modalities of infiltration in some systems, as well as the extremely high level of an attack, have created lately, a great panic among State actors, but also NGOs.

According to NATO specialists, the effects of these attacks can be as dangerous as the consequences of conventional attacks as well as natural disasters or epidemics.

The cyber defence and the building of cyber security strategy is a priority for states that want to reduce as far as possible, the effects of future cyber-attacks which would bring risks to the security and stability of the State.

Cyberspace has been recognized by NATO in the framework of the Summit in Warsaw from mid-2016, as "the operational area where the Alliance needs to defend itself as it does in the air space, land or sea"¹.

Romania was faced with numerous cyber-attacks in the recent years, representing the true threats to organizational and economic information system.

Romania's Cyber Security Strategy

According to the Romania's Cyber Security Strategy, cyber security is 'the state of normality resulting from the application of a set of proactive and reactive measures, to ensure

¹ <http://intelligence.sri.ro/cyber-noul-domeniu-operational-nato/>

from cyberspace confidentiality, integrity, availability, authenticity and non-repudiation in electronic information resources and services, public or private. Proactive and reactive measures may include policies, standards and guidelines, concepts of security, risk management, training and awareness activities, implementation of technical solutions to protect their Cyber infrastructure, identity management, consequence management².

The protection of systems communications and information is an increasingly more difficult task because every day, new viruses appear increasingly stronger, that can lead to compromising both some state apparatus' institutions and major economic actors.

Both Romania and People's Republic of China enjoy the responsibility of membership of ONU with such protective measures against cyber threats. Unfortunately, cyber attacks have no borders, and states cannot transform themselves into fortress capable to defend from these attacks.

In terms of the NATO agenda, the subject of Cyber Defence was included, along with the Summit in Prague in 2002, and 'subsequently confirmed as a priority at the Summit in Riga, in 2006 and the first version of allied policy on this domain was agreed at the Summit in Bucharest in April 2008. This cyber security policy has been updated through the adoption of a new version in 2011'³.

Romania supports the draft defence against cyber attacks globally, participating actively in various international meetings and debates between experts in the field.

In Romania, the Romanian Intelligence Service is the national authority in cyber intelligence area.

In February 2013, the European Commission published a 'cyber security strategy and a proposal for a directive concerning network and information security (NIS)'⁴. Thus, the 'cyber security strategy, named 'A cyber-space open, safe and secure' presented the global vision of EU on the best ways to prevent and manage threats and cyber attacks, in order to promote European values of freedom and democracy and to ensure the growth of the digital economy under conditions of safety'⁵.

In Romania, by the CSAT decision no 16/2013 and HG. 271/2013⁶ was approved the Cyber Security Strategy, which sets out the conceptual, organizational and action framework, necessary to ensure the cyber security and cyber infrastructure protection aimed in line with new concepts and cyber defence policy developed and tailored to the level of the European Union and NATO⁷.

Both the latest cyber attacks and cyber security incidents that have put at risk information system led to the awareness of the necessity of adopting at the international level, a strategy in the field of cyber security.

If globalization and states borders' removal in terms of information, brought countless advantages by a fastest transmission of information, transposing it into various spaces, by eliminating time barriers, it should be very clear that there were created unimagined hazards to the information security, just a click away.

The paradox lies in the high level of the society, in terms of information and cyber threat. Thus, because of the information level of a state is higher, it become more vulnerable, but also more attractive from the hacking activity view.

² <https://www.enisa.europa.eu/topics/national-cyber-security-strategies/ncss-map/StrategiaDeSecuritateCiberneticaARomaniei.pdf>

³ http://www.qmagazine.ro/sorin-ducaru-despre-profilul-cibernetice-al-romaniei-in-nato_273108.html

⁴ http://kpmglegal.ro/_files/Factsheet/Securitatea_cibernetica_si_mediul_de_afaceri.pdf

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⁷ <https://www.mae.ro/node/28367>

Cyber attacks threats may take various forms: from errors that may seem caused by man, system crashes, incorrect scheduling, delays in the completion of orders, deleting all data from the servers. Regarding the economic sphere, cyber attacks are felt perhaps most acutely. Business flow can suffer, especially in online economic projects.

Cyber threats affect primarily the national security. Thus, a cyber attack against the computer structure of another State is considered to be an element of the strategic coercion. At the international level, there is a dispute over whether the violation of privacy and the integrity of a computer system should be considered as an act of war and should be a subject to regulations of the classic war.

Regulating cyberspace domain in an exactly normative framework from Romania is currently in its infancy. Thus, understanding the necessity of global phenomenon is urgently needed in the shortest time.

As regards measures taken after a cyber attack, they hit by the difficulty of identifying the real stakeholders, the geographical space, the opponent's action capability, as well as the amount of information captured or being vulnerable by the attacker.

Therefore, it is necessary to strengthen cooperation between States in the cyberspace field, especially taking into account the volatility of borders.

National strategy for cyber security of People's Republic of China

In December 2016, the Chinese Government has developed a national strategy for cyber security⁸.

According to this document, 'safeguarding our country's cyber security is an important measure to move forward the strategic arrangement of comprehensively constructing a moderately prosperous society, comprehensively deepening reform, comprehensively governing the country according to the law, and comprehensively and strictly governing the Party forward in a coordinated manner, and is an important guarantee to realize the 'Two Centenaries' struggle objective and realize the Chinese Dream of the great rejuvenation of the Chinese nation⁹.

Regarding the idea of states cooperation, one of the most important principles of the People's Republic of China is the 'opening'. Thus, 'all countries worldwide are to develop ever closer cooperation in areas such as technology exchange, attack on cyber terrorism and cybercrime etc., a multilateral, democratic and transparent international Internet governance system is to be completed and perfected, and a community of common destiny in cyberspace with cooperation and win-win at the core is to be progressively realized¹⁰.

International environment and the extent of the threats from cyberspace led to the awareness necessity of adopting a strategic document in the field of cyber by the policymakers. However, this document, created controversy not only on the Chinese territory, and at the level of global thinking.

The rules imposed by this document will come into force since the middle of this year. Among the issues that will form the basis for new laws, must be noted the obligation on operators and internet providers to cooperate in the field of investigations the involving crimes and aimed at national security, as well as the obligation to test and certify the computer equipment. Also, companies will give unlimited access for inspection by government investigators, where there are some suspicions for illegal acts.

⁸ <https://chinacopyrightandmedia.wordpress.com/2016/12/27/national-cyberspace-security-strategy/>

⁹ <https://chinacopyrightandmedia.wordpress.com/2016/12/27/national-cyberspace-security-strategy/>

¹⁰ <https://chinacopyrightandmedia.wordpress.com/2016/12/27/national-cyberspace-security-strategy/>

The phenomenon of "Edward Snowden" created panic among Chinese institutional structures, fearful that at any time, in any institution with access to classified information, there may be a new "Snowden" which could harm seriously the State security. From private companies view, the control they want to impose to the Chinese State, by accessing and making available all own data base in order to avoid a serious security incident, internal or external, is seen as an interference with the company's regulations.

In the private sector, the Cyber security strategy is seen as a step backwards in China's development, and not a cyber-protection approach, by creating in fact, the barriers imposed on trade and innovation.

It should be noted that the People's Republic of China, through security policies relating to Internet access, restricted, over time, the access to certain sites, for security reasons. The politics of censorship of the Internet has led, from 2014 so far, to the access restrictions for the Chinese population to over 3000 sites. Among these, the most relevant are: Google (and related services), social networking platforms (Facebook, Instagram, Twitter), the video-sharing platform YouTube, but also relevant sites of some Western media publications, which could have been a great influence on Chinese population in terms of freedom of expression.

China is thus considered 'the biggest prison for internauts'¹¹.

The laws relating to cyber security in China involve the requirements regarding the information inside of a State, which should be kept only on internal servers, which means that their transfer outside the country could be achieved only with permission. These rules bring great damage to multinational companies, which stores the data in the free internet, without fixed borders and also volatile.

Opinions about the measures of protection of online area are divided. Ma Minhu, director of the Information Security Laws Research Center of Xi'an Jiaotong University, considers that 'The new law is to protect China's cyber security and will not damage the interests and the normal operations of foreign companies'¹².

Due to the rigors imposed by China, the foreign companies will suffer and would like to develop their business opportunities in the Asian region. China is recognized, in the business domain, as having a negative reputation arising from the fact that it wants to obtain the data from the external environment, data copying, without the principle of reciprocity. The Chinese Government's measures to restrict and even, leading to the definitive elimination of some potential contributors, over the long term, it may be a decisive element in China's economy.

The American companies have begun gradually, to lobby against the security project in the field of cyber security threats, as well as against the Internet standards imposed by China, based both on economic arguments, but also arguments regarding rights and liberties.

In conclusion, the cyber attacks from every corner of the world, by endangering the societies' functioning as a whole and by the imminent threat that this represent, have become part of the unofficial policy of many States or organizations.

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THE RISK MANAGEMENT AS CRITICAL INFRASTRUCTURE IN THE CONTEXT OF NATIONAL SECURITY AND DEFENCE

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Abstract: *In this paper we talk about risk management as a critical infrastructure and assistance to the emergency and as a fundamental human right, as much as the right to life or the right to health. In our country, emergency management is one of the forms of national security. The main mission would be to provide citizens with security and protection against the effects of emergencies and / or military actions during peace, crisis and war, through strict observance of human rights in a sovereign, independent, unitary and indivisible actively engaged the enlargement and maintenance of European and Euro-Atlantic principles in a political regime based on strict constitutional democracy and democratic civilian control, the emergency management system. To accomplish this mission, the national emergency management is and will be a public service. How can we fight terrorism while still protecting freedom, rule of law and democratic control? People want both secure and open societies. Opus human rights activists, policy makers should be concerned both with regard to the first issue, and in the second. Fear has penetrated our everyday lives. How do we fight? The success of a terrorist act, an emergency or a natural disaster is amplified by the fear following the event. How can we avoid, on the one hand, panic from paralyzing normal life and, on the other, the dangers we may live with from now on? Can we adapt our institutions and international new threats: terrorism chemical, cyber, nuclear, natural or man? How can the institutions survive - which used to provide resources and to fight combat hazards, and which do not distinguish between combatants and non-combatants and do not respect international boundaries and administrative rights? How to fight the battle of ideas? How do we solve ideological challenge to Western values imposed by Islamist State deviance, or other types of hegemony? This article tries to ask some pertinent questions and identify certain directions in order to find real, specific answers, and propose a possible variant of modernization of the management system of emergency situations from the perspective of critical infrastructure. to its evolution will inevitably lead to increased efficiency in times of specific missions.*

Keywords: *risk management, component information, critical infrastructure decisional plan, foreign policy, national security and public order, risk assessment, hazard classification.*

Introduction

The new security framework calls for a more effective crisis management. To balance these requirements, it needs a new legitimacy. Therefore, a review is underway of the Romanian law, by which Romania is adapting the structure of a modern, European crisis management, emergency management that will play a major role.

The new Management Structure of emergency means a changed lens beyond the prospects of war, designing a general perspective, involving society robustness and ability to solve crises in peacetime. This change of purpose has already occurred in some European countries. Preparedness measures taken by France, Germany or the Netherlands, for example, were directed mainly towards the crisis in peacetime, compared to Sweden, where until recently war was a geopolitical reality.

Raising awareness on the general vulnerability, exacerbated by the tragic experiences of 11th September 2001, highlights the importance of not ignoring the possibilities of having new structures, robust, able to manage new crises. At the beginning of the 21st century, the difference between war and peace has decreased.

Preventing and resolving emergencies becomes an integral part of policy and strategy development, security and stability, both globally and within each nation involved in

international life. It requires, more than ever, to better clarify the role and responsibilities of the various entities involved in emergency management; in addition, readiness of structures and response to such situations are being constructed and reinforced.

Prevention, preparedness and proper disposal of all emergencies of any kind arising from threats and risks to national interests are specific ways of action in national security, an area particularly complex and multidimensional.

Emergency management as a critical infrastructure is a component of national security, in charge of particular importance on achieving the specific objectives of this system. Thus, the new vision of national security and defense necessarily requires a new vision on the evolution of structures and missions of emergency management, in order to adapt them to the needs of efficient response, in which new threats, risks and challenges of the future must be transposed.

In terms of emergency management in Romania, at the moment, it is the only element able to achieve prevention and response requirements specific for emergency management. The Romanian society as a whole and emergency management is in the extensive process of adaptation and upgrading, redesigning systematic aspects, structural remodeling and adaptation of tasks and responsibilities.

Of course, to the biggest challenges we have to subsume other multiple considerations and determinations. Now, while witnessing the process of inherent globalization, perhaps more than ever, we must keep the sanctity and strengthen our character defining features clearly stipulated in our fundamental law.

In this world of globalization, partnership is essential: an individual, an institution, a people without a consistently shaped identity do not offer too many reliable guarantees.

The problem of achieving a global or regional security system becomes complicated and difficult to outline in point of dimensions or the boom of information. International relations are conducted on the information coordinates, and its dissemination is hyper-socialized.

The dimensions of national security

Managing the national security issue involves a more united and coherent logic, based on detailed theoretical substantiation, appropriate regulatory and organizational framework resources, methods, levers and tools, etc. Because the problems treated are extensive, they cannot be addressed only in integrative perspective, be it multidimensional or dynamic.

In theory, including the Romanian conception, it has given way and affirmed a new concept, integrity, respect to the system of *national security and defence*. Romania's security strategy concept is highlighted as the *national security system*.

The reason that the name does not appear and national defense is not related to the exclusion of this actionable component size, but the specific status thereof, as a component for exceptional situations, considered very unlikely in the medium term taking into account the current strategy¹, we can conclude that our country is not and never will be in the near future faced with major, military style threats, classic to national security.

A concept which defines a complex and multidimensional national security system subsumes and combines subsystems with overlapping and interference, in their turn complex and multidimensional, such as: *sub-conceptual-doctrinal decision-making, organizational, information, action, resources, infrastructure, scientific research, education, and culture*.

¹ Hotărârea nr. 1040 din 13 octombrie 2010, pentru aprobarea Strategiei naționale de ordine publică 2010 – 2013, publicată în Monitorul Oficial nr. 721 din 28 octombrie 2010; Strategia de securitate națională a României, București, 2007.

Each covers and performs a specific dimension of security, interferes and interacts with other system integrators for consistency.

From the functional perspective, the system through its components and the logic of relations established and practiced, performed:

- evaluating the effectiveness of measures taken in national security and for normal situations, as well as for the crisis situations and civil emergencies;
- performing studies in depth, systematic, continuous and complete of the internal and international security developments and trends manifested in it;
- establishing and defining national security interests, i.e., collection, storage, analysis, interpretation and dissemination of data and
- collecting the information necessary for national security and defense; setting action for strategy affirmation, development and protection;
- promoting fundamental national interests in preventing and managing crisis situations (crisis management) and ways of achieving this strategy;
- identifying and assessing risk factors, dangers, threats and possible attacks against fundamental national interests;
- organizing scientific research and education for national defense and security, resource security identification, design and implementation of appropriate management thereof.

The new theoretical-doctrinaire strategy of national security of our country is characterized by:

- identification and capitalization on new security resources by addressing them in an innovative manner;
- use of all national security approaches - political, economic, financial, military, civic, social, ecological, cultural, etc.;
- issues of concern to meet the necessity dictated by the dynamics of the geopolitical developments;
- analysis of the phenomena in the economic and social reality of the country, as well as mutations, often unpredictable, occurring worldwide;
- novelty of the approach, with wide opening to more comprehensive, complex and multifaceted issues;
- overcoming and abolishment of the rigid schematic-dogmatic manner, strictly in terms of our technical-organizational and functional institutional within the national security system;
- inclusion in it of the civil society and citizens, with appropriate rights and obligations in all aspects of the national security system;
- openness, flexibility and adaptability;
- combination of elements of both traditional and new perspective;
- enlarged systemic vision;
- morality and lawfulness, based on the existing international laws, principles and values of international morality, religious values, desired by the Romanian and international community.

The decisional fundamental responsibility for security of the country is carried out by the President, Parliament, Government, other state institutions, according to their respective constitutional prerogatives. The complexities that influence this area require however that the national security system attracts civic structures too, nongovernmental, academic and commercial holding technologies, information and resources related to national security and which can contribute to achieving and maintaining environmental balance of internal security - economic, social, civil and military.

The information component is particularly important. The information subsystem integrator element for national security system must contain all the components and expand as much in the international security environment. It is provided consistency in the operation of all other subsystems, vendor risks and threats, vulnerabilities through its present state, especially in terms of infrastructure, the regulatory framework for data and information, safety and stability in operation, its own vulnerability.

In the acting plan, correlated with other ingredients, are defined directions for national security policy. Overcoming the rigid approach, strictly technical and templates, is the entry in the feature.

Beyond the relatively accurate guidance and targeting, dictated by the realities established practice, restrictions and constraints of all kinds, including semantics remain a wide open horizon for initiative and show the expected and required response from the civil society, from non-governmental structures, academic, commercial, etc.; every citizen could and should act as a beneficiary not only of security, but also as the guarantor of its manufacturer. Security Resources is a dynamic subsystem that imposes a decisive condition to other subsystems. Their nature is diverse. Quantity and quality are evolving upward. Appropriate management of these resources is absolutely necessary and is an essential prerequisite to achieving the objectives of security policy.

The essential resources to ensure the safety and success of the policy in this area are:

- political and social support resources: the unanimous option by all political forces and public institutions to strengthen our country's position as an important member of the European Union and Euro-Atlantic Alliance;
- broad support for efforts to modernize our society and its place in the European Community;
- allocation of adequate financial resources, with attention directed towards their use as efficiently as possible;
- intellectual potential of the Romanian people, the level of training and education in European tradition, the desire to acquire what is performing internationally.

Thus, we will consider the following:

- increasing transparency and accountability of public funds to taxpayers;
- ensuring better coordination of institutions involved in ensuring resources and more efficient exercise parliamentary control;
- improving resource management based on integrated programs for all institutions involved in activities related to defense, public order and national security.

National security is complex and multidimensional, to be achieved and maintained as such, simultaneously and equally in all dimensions: political, economic, social, education, research and culture, national security and public order, national defense, foreign policy. The political dimension of security materializes both in conceptual, theoretical and the practical in-action, with priorities in at least two respects: the politico-administrative and foreign policy. Asserting the politico-administrative dimension of national security, aimed at modernizing society and our country requires strong action to strengthen the regulatory function of the state and the authority of its institutions. The accomplishment of national security calls for capacity building regulations, measures taken democratically, institutional and administrative reform, improvement of the system of political participation and civic control. Specific resources of this area are set and have a positive development, both in the domestic and in the international security area.

Foreign policy actions, aimed at achieving and maintaining national security shall be taken on the following fundamental guidelines:

- constant concern to improve the legal status and treatment of Romanian minorities in other countries in accordance with international norms on the rights of

minorities and the commitments assumed through agreements and bilateral treaties;

- support to the Romanian communities abroad to preserve their national identity and identify potential cultural and spiritual support to achieve the goals of Romanian diplomacy;
- promotion of an active policy - bilaterally or within an international framework - for ensuring security and stability in Southeast Europe, as in the South Caucasus and the entire region of the Danube and Black Sea; strict compliance with international commitments on non-proliferation and arms control exports of strategic and dual-use technology and active participation in debates, in various forums on the subject;
- diplomatic support for participation in U.N. peace operations and other actions aimed at ensuring the stability and confidence at regional and global levels;
- developing cooperation with countries in the region, including through participation in regional cooperation projects, sub-regional, bilateral; strengthening relations with other member states of the European Union - on a bilateral and multilateral, with neighboring countries and with countries with which our country has traditional relations.

The economic dimension of national security raises most of the problems. Large discrepancies in economic development, especially under the impact of unprecedented technological advances, limited access or discriminating vital resources, in conjunction with specific aspects of other dimensions may be generating crises and unexpected violence, both in the international influences on the country our environment and internal security.

Romania's main security problems are economic in nature. Prolonged economic difficulties of transition, poor quality of life, poverty, intolerance can produce, affect social solidarity, foster and feed populism, radical and extremist manifestations. The economic dimension of security is marked by the consequences of poor management of economic and social transition, the decrease in the resources allocated for the modernization of society, the difficulties in the industry, decline in agriculture, insufficient development of territorial infrastructure, new forms of criminality economic and financial and other.

Similar problems are manifest in the subregional economic environment, impacting negatively on the national economic environment and the country's capacity to make decisions in a position to approach the economic-financial system characteristic of the Western democratic world. Economic security for Romania as a pillar of stability in the area, fulfilling obligations, constitute a decisive step. Thus, the policy of achieving these essential dimensions of national security strategy adopted by our state opens firm and consistent lines of action, such as:

- guarantee of free and honest competition;
- consumer protection;
- domestic trade development activities, including regulations of local government on stimulating production and local markets;
- orientation to attracting foreign investors, mainly European and Euro-Atlantic space;
- tourism development and strengthening of institutional and legislative framework on the environment and environmental quality;
- promotion of new technologies to achieve efficient and effective transition to the digital society;
- planning and rehabilitation of transport infrastructure, revitalizing agriculture and forestry development;

- strengthening the banking and insurance sector, capital markets discipline, international economic cooperation through development of new forms, active and simulative, foreign trade;
- promotion of functional industrial policies, appropriate social needs and adaptable to market requirements;
- further privatization, restructuring and modernization, focusing on more dynamic and productive industrial areas that have potential, under U.E. sectoral programs or agreed with international financial organizations; simulation through effective regulation and various forms, small and medium enterprises;
- improving the business environment, reducing red tape, regulations favoring investment and maintaining economic growth through an efficient production required by the market;
- consolidating macroeconomic stability, the adoption of coherent fiscal policies through simplified regulations and incentives, tax reform, reducing domestic spending and restructure large companies and state companies, monetary policy and exchange rate appropriate.

Cultural security is size independent with specific resources and potential. It is marked by the need to configure and assert the cultural and civilizational new dimension, in the spirit of the European Community, national solidarity, communicative culture, attitude towards performance and against elites. The lines of action in this regard are:

- improving the legal and institutional framework in the field of interethnic relations, supporting the consolidation and development of ethnic identity;
- revival of youth policies;
- protection of cultural and religious diversity, promote and confessions,
- dialogue with representatives of religious life;
- promotion of culture as the foundation of sustainable development as the core of the nation and national identity;
- protection, conservation and restoration of national heritage and its
- promotion as part of world cultural heritage;
- development and promotion of information technology and increasing the number of specialists in this field;
- revitalization, on a competitive basis, the national research system capable of actually contributing to the modernization of our society;
- improving the legal and institutional framework for research and development; promoting education requirements in the information society; connecting higher education to social and economic requirements; providing basic education, increasing the quality of school education; further reform the education system as the foundation of human resource policies.

National security and public order by its location at the confluence of defending the interests of the state and citizens, constitutes a very important dimension, given the existing risks and vulnerabilities, and the potential of this area. Thus, the course of action of the security policy in this area are the priority, with direct and considerable impact on domestic security environment and on security in general:

- continued development of civilian oversight of national security institutions and civil society involvement in the defense of public order;
- strengthening prevention and control actions to limit and stop crime; strengthening institutional action - *intelligence services, police, prosecutor's office, justice* - to enable the firm application of the law;

- strengthening partnerships with similar structures in Member States N.A.T.O. and U.E. and developing links with those of other countries, the continued participation of the public order, civil and military in international missions;
- harmonizing legislation and specific procedures with international regulations;
- community standards ensuring the functioning of the institutions that have responsibilities in the migration and asylum; protection of privacy, self-image and the correct information of citizens; building partnerships with civil society, including through ensuring a balance between the right to freedom of information and the need to protect classified information;
- border security, in line with national interests and requirements imposed by the European Union, along with the modernization of border control procedures;
- improving cooperation between the authorities of the defense system and justice and their civil society;
- effective fight against terrorism, corruption and organized crime,
- including through various forms of regional and subregional cooperation;
- establishment of national crisis management system on the principle of integrated risk management and its connection to international organizations;
- institutional restructuring of the public order by decentralizing services in the field of public order and demilitarization greatly them.

Components of national defence

National defence is a dimension where there are significant changes in all areas, especially in the theoretical, doctrinal, institutional, organizational and actional fields. Considered until recently (by the end of the Cold War bipolarist world) as the main way of counteracting the dangers and threats to security and central resource to deter and penalize any aggression (which could only be military and generating confrontation between the two blocs politico-military) national defense in its army, it is in the alternative, although develops a theoretical model and powered integrated European security and defense.

The Romanian security model does not diminish the role of this dimension of national security, even if one of the prerequisites from the bow is that in the near future there is no major threat of a classic military type.

Within the National Defence are circumscribed multiple and diverse forms and modes of action, permanently undertaken in peacetime, or complementary actions in the areas included: *political, diplomatic, economic, scientific-technical, cultural and other* actions considered and undertaken on a priority basis and mainly in the national security policy area. Therefore, the size of national security ensuring national defense is not obscured or overlooked, but built on a much higher level, exercised and integrated with more consistency and efficiency.

Thinking and practice foreshadowed *the new national security strategy and defense* are illustrated *in the set of sectoral lines of action*:

- adaptation to the contemporary conditions of mobilization system and integrated defense planning and ensuring consistency between objectives and resources;
- building and strengthening of capabilities necessary to fulfill the obligations assumed by our country in the course of peacekeeping, rescue, crisis response, counterterrorism and humanitarian assistance at the subregional and regional levels;
- support to public authorities in case of emergencies;
- strengthening parliamentary control over the military;

- coherent planning of procurement and acquisitions in coordination with economic policies, privatization and restructuring of the national defense industry;
- development and acquisition of new equipment, interoperable with those used by other member countries N.A.T.O.;
- resize command staff at forces in the process of restructuring and modernization;
- improving cooperation between specialized services in the area of an exchange of information regarding potential risk factors to security and internal stability;
- effective management of human resources and forces restructuring, while increasing professionalization of armed forces personnel and the modernization of military education;
- operationalization forces for participation in international missions under the European and Euro-Atlantic security and defense.

In these circumstances, *the role and importance of emergency management as a critical infrastructure*, protecting the general public in the event of conflicts or emergencies will increase.

Hence, there need for reform of the institution aimed, on the one hand, increasing the capability of his act, and secondly, to make the transition to the system of techniques, tactics and procedures in the areas of management, administrative and logistical support to ensure interoperability between military organizations and subordinate structures, national and international.

The national security policy is concerned about the risk of erosion resulting from long-term changes in the conditions of social, economic, demographic and political changes that tend to reduce the relative power of the state².

This policy is conducted on an operational level and the institutional one.

At operational level, the national security policy consists of the immediate measures to prevent the security threat.

At the institutional level, it is considering how policy is formulated and executed at the operational level.

Risk, threat, danger determinations on emergency management

The current national security strategy starts from the reality that clear-cut dissociation between developments in the domestic and international environment is increasingly difficult, in the context of action and interlocking processes that can create favorable conditions and the risks posed to national security.

Current international circumstances generalize the European spirit of cooperation and dialogue, foreshadowing a predominantly positive development background, including security. As a result, our state's responsibility is to manage internal risks and vulnerabilities authority influencing our country's position in the international security environment.

Consideration of these domestic factors, without neglecting those of an external nature, enable transformation to attain the objectives of sustained and lasting economic and social development, a great asset security and affirmation of our country not only as a beneficiary of security, but also as a provider of regional and international security.

The National Security Strategy mentions a number of external risk factors, nonclassic asymmetric risks, to be established as new national security challenges and vulnerabilities of a domestic nature that may have some impact on national security.

²După Samuel P. Huntington, *Introduction: National Security and Civil-Military Relations și Power, professionalism and Ideology: Civil-Military Relations in Theory*, în *The Soldier and the State, The Theory and Politics of Civil-Military Relations*, vintage Books, New York 1957, pp. 1-3 și 80-97. Traducere de Marian Zulean.

The Explanatory Dictionary of the Romanian language refers to the origin of the French word risk (risque), defining it as *"the possibility of reaching a peril to face trouble, to incur a loss, a possible danger"*³, very closely defined to that of "danger" - *"situation or incident that may endanger their existence, the integrity of someone or something"*⁴.

The National Security Strategy mentions a number of external risk factors, asymmetric risks, the nonclassic ones to be established as new challenges to national security and vulnerabilities of a domestic nature, which may have some impact on national security. While risk and danger are subsumed under threat and aggression constitute potential threat is a nonviolent aggression that affects the assaulted system, they took the forms of economic pressure, cultural, psychological aggression, informational, political-diplomatic, military, imagological, etc.⁵

Risk appears to be a relationship between the existence of a technological or industrial (e.g.) phenomenon with serious consequences and a company or person to bear it, just environmental factors or other creatures. It has an undefined forecasting feature, trying to render the likelihood or the real possibility of generating a phenomenon somewhat expected, with serious consequences as to which man has a passive position.

Internationally, risk is defined as *"a possible number of casualties, injuries, damage to property and disruption of economic activity during a reference period and in a given region for a particular phenomenon, and is therefore the product of specific risk and risk elements"*⁶ The product hazard is represented by the losses and damage risk.

In the dedicated literature, risk is defined as a combination of probability and severity of hazard defined consequences.

Therefore, risk always involves two basic components: probability and consequences.

Risk can be defined as the possibility of human exposure and goods created by this action a hazard of a certain size. In other words, risk is the product of hazard, risk and vulnerability factors.

The extent of risk depends on the type of proportional hazard produced (nuclear accident, chemical, biological, inland communication, etc.), the type and size of the elements affected by damage. For example, the dangers of technological hazards are generally associated with low probability and high risk consequences.

Risk can be generally classified in terms of quality, acceptable and unacceptable risk, and in quantitative terms, this risk can be defined by calculating the likelihood of an event and the likely consequences of such an event.

For those hazards considered as potential technological hazards, it is imperative to show how risk control acts.

Control thereof comprises:

- risk evaluation;
- risk reduction;
- response planning in case of emergencies.

Risk control requires carrying out an assessment: that is to see if risk is considered acceptable or unacceptable. If it is unacceptable, then measures are set to reduce risk and response in case of emergencies; after the implementation of measures, risk is reassessed.

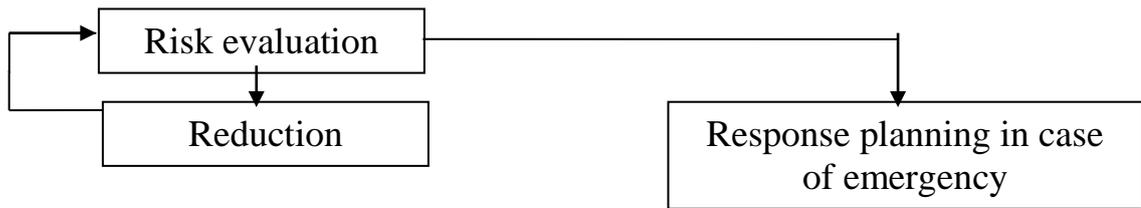
Schematically, risk analysis and planning in case of emergency can be represented as follows:

³ Dicționar Explicativ al Limbii Române (DEX), Editura Academiei R.S.R., București, 1984, p. 809.

⁴ *Ibidem*, p. 667.

⁵ Constantin Sava și Constantin Monac, *Stărilor excepționale*, Editura Forum, 2000, p. 41.

⁶ NATO policy on cooperation for disaster assistance in peace time, NATO/CEPD, June 2015.



Risk assessment is the overall process of identifying hazards, assessing the probability of the existence and likely consequences, i.e., risk associated with danger. This process is interactive, that is after evaluation if it was agreed that the risk must be reduced, it is necessary to reassess the risk by any action taken.

Hazard is a key element in its assessment, because in this way only those with potential major accident hazards are considered.

Risk reduction aims to decrease the likelihood of injury in case of danger and limiting the consequences of hazards, until the risk is as tolerable.

External factors of risk to national security at this stage are:

- limiting access to certain resources of our state and regional opportunities, important for the realization of national interests;
- gaps between levels to ensure the security and the stability of states in the proximity of our country;
- actions inciting extremism, intolerance, separatism and xenophobia that may affect our state and promoting democratic values and the emergence of clandestine migration influxes of refugees;
- possible adverse developments in the sub-regional level in the field of democratization, human rights and economic development, which could result in serious crises, with destabilizing effects over a wide area.

Nonclassic asymmetric risks consist in non-armed and armed actions, deliberate, with the aim to damage national security by causing direct or indirect consequences on economic and social life.

This category of risks includes:

- deliberate provocation of ecological disasters;
- economic and financial aggression;
- actions to deliberately damage (in different forms and varying circumstances) our country's image internationally, affecting the credibility and seriousness in meeting their commitments;
- individual or collective actions illegal access to information systems;
- actions that may threaten the safety of domestic and international transportation systems;
- transnational and international political terrorism, including in its biological forms and functions.

Among the components of this category of risks, international terrorism is manifested in an acute unprecedented form, envisioning multiple effects on the security of states and international stability in general, which requires that internal measures for crisis management should be better coordinated, and the country's participation our international action to combat this threat to be operative and effective.

In domestic economic and social activity vulnerabilities occur in certain circumstances, that can have a negative impact on national security.

Consistent orientation towards their knowledge and their removal enhances control and prevent and counter the emergence and manifestation punctual risk factors listed above and reduce the possibility of other risks.

These vulnerabilities can include:

- emigration of specialists from different fields peak phenomenon affecting the development potential of our society;
- shortcomings in the protection of classified information;
- maintaining a low level of information infrastructure and delays in the implementation of its standards demanded by the dynamics of globalization;
- weaknesses in meeting their commitments to N.A.T.O.;
- lowering the level of public trust in state institutions as a result of indolence and excessive bureaucracy in administration, leading to the weakening of social cohesion and civic;
- failure to comply with environmental standards in the operation of industrial projects;
- the possibility of environmental disasters, natural disasters and environmental degradation processes;
- maintaining potential sources and causes of social conflicts, lesser or greater extent, by dissipating the energies, reduction or interruption of economic activities and processes, as well as the state of tranquility of the population;
- ineffective responses of governments to the deepening economic crime and disturbance of public order and safety of citizens, phenomena that increasingly apparent negative effects on social cohesion and solidarity and quality of life of citizens; increased corruption and mismanagement of public resources, producing deepening social inequities and underground economy proliferation;
- the continuing economic, financial and social crisis generated by prolonged transition and delayed structural reforms.

The vulnerability of domestic nature can affect the responsiveness of the management system of emergency situations in case of emergency, in the same way that it affects the responsiveness of the military in countering threats.

This can cause:

- reduction of the effectiveness and credibility of both institutions;
- stagnation of reform and modernization of the militarized forces;
- extension over anticipated periods of the remodeling process of the management system of emergency situations.

In the system of national security, emergency management is reflected in the place, role and mission of the utmost importance as part of the service company that acts to achieve all the objectives of security policy.

Emergency management must find the most effective ways to counter the influence of risk factors specific to its field, focusing on:

- deliberately inflicting environmental disasters;
- actions that may threaten the safety of domestic and international transportation systems;
- transnational and international political terrorism, including in its forms and biological informatics;
- illegal migration and the emergence of massive refugee flows; proliferation and development of terrorist networks, transnational organized crime, illegal trafficking of people, drugs, weapons and ammunition, radioactive and strategic material;
- proliferation of weapons of mass destruction, nuclear technologies and materials, armaments and unconventional lethal devices.

CONCLUSIONS

Risk management (emergencies) as critical infrastructure in our country involves humanitarian tasks intended to protect the civilian population against the dangers of hostilities or emergencies and to help them overcome their immediate effects, ensuring the conditions necessary for its survival.

In this context, we believe that the meaning of the current management concept emergencies, based on analysis of the existing institutional framework (national and international) could be defined as: the management system for emergencies is a component of national security and comprises an integrated set of specific activities, measures and technical regulations, organizational, humanitarian and public information structures and specialized services established by law in order to protect people, assets and values of heritage and environment against adverse effects of emergency situations or armed hostilities, remove their aftermath and operational conditions necessary to ensure the survival of the affected population.

The activity of the emergency management in Romania is of national interest and is carried out under normal conditions, emergencies and war. The organization and management system is the responsibility of the Government and is implemented by structures and specialized services of the central government and local authorities within their respective areas of authority. However, the real necessity leads to redefining the duties of the emergency management in Romania. In terms of personnel, specific missions include redefinition:

- providing public information sources of risk to which it is exposed, possibilities and protective measures;
- preparing the population for emergency situations;
- warning the population in case of emergency or military hostilities;
- protecting the population, assets, cultural values and heritage;
- assessing risk and planning intervention;
- reclaiming territory of unexploded ordnance remains;
- requiring participation of forces and means to rehabilitate public utility services;
- preventing and fighting fire;
- providing qualified medical assistance and extrication;
- performing intervention activities in different environments (water rescue search, from rubble, aid people with the intention to save those trapped in narrow spaces or rooms, etc.);
- participating in humanitarian activities (water transport, etc.).

As in the other countries, the measures apply depending on the extent of the emergency or the state of emergency declared by the competent authorities. The principles underlying the development of the system of emergency management in our country are as follows:

- *Operational flexibility.* Nothing can remove the unpredictability of everyday life. Intervention planning should provide a number of capabilities, according to specific scenarios. The main objective of emergency management is providing flexible enough capacity for a range of options in a range of realistic situations in the context of the priority set.
- *Integrated capacity.* According to this concept, it looks at how the components of emergency management and others can work together to provide an integrated set of measures. Intervention capacity takes into account a number of factors: personnel, training, support and maintenance, logistics, doctrine, etc.

- *Interoperability.* Achieve interoperability within N.A.T.O. is one way of modernizing emergency management.
- *Simultaneity interventions.* It is important that emergency management to be able to perform more than one action in a period.
- *Sustainability.* A force support requires the ability to replace intervention units in a reasonably short time and the ability to supply and support forces operating in a high pace. This requires an effective approach in the long term, in recruiting and retaining staff and efficient logistics on which to rely.
- *The focus on technology as critical infrastructure.* Potential changes in the nature of the intervention and structure of the management of emergency situations arising from technological innovations, current and future, remaining open to opportunities to take advantage of redirects major technology when they occur, without discouraging investment, there where production is forecasted risk.
- *Cost efficiency.* We regard continually to ensure maximum output at the lowest cost possible, by seeking the most effective solutions.

In conclusion, concerns for modernizing emergency management in Romania include the development of credible response capabilities, restructured and streamlined operational partnership meant to intensify gradual integration through achieving interoperability with similar structures in other NATO member countries.

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TENDENCIES OF STRATEGY EVOLUTION. PRESENT AND PERSPECTIVES

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Abstract: *The paper will address some theoretical aspects of the strategy and not least, the military strategy. In order to do that, we have researched existing documents at the national level and abroad, and especially in the USA, Romania and the Russian Federation. Furthermore, the works of important military theorists such as Sun Tzu, Carl von Clausewitz, Liddell Hart, Vaduva Gh., Niccolo Machiavelli, Logofatu Gh., Beaufre A., Sokolovski V., Soare C., Svecin A., Onișor C., and others underlies our research, that helped us to formulate, at the end of the article our own conclusions and recommendations.*

Keywords: *Strategy, grand strategy, national security, national defence strategy, military strategy, power instruments.*

Since ancient times the strategy has designated commander`s art of leading the army on the battlefield. This term was widely used by the Greeks, while among other nations, even if the phenomenon existed, had a different name.

The term “strategy” comes from ancient Greek, from “stratos” - army and the “ageint” – leadership. “Strategos” was the name given to the army leaders and “strategike” meant army leadership.¹

With the time, the term strategy became universal, being taken into world warfare. In the Middle Ages and Modern Times, the strategy has become an art of war, which was going to impose the ways of solving complex strategic situations. First works began to appear that put the theoretical foundations of the strategy and the strategy had began to be seen as a science, whose subject was the armed struggle. During this period the prestigious work of Carl von Clausewitz's "On War" appears, in which a clear structuring of warfare is made and the strategy gets the decisive role in planning and leading the armed struggle.

In the late XX – early XXI century the strategy begins to encompass a much broader spectrum. If in the Ancient times and the Middle Ages the strategy was treated as commander`s art to lead the army on the battlefield, in the modern and early contemporary period the strategy dealt with issues of planning and the management of the war, then in our times the strategy is dealing, in general, with the issues regarding the existence and development of a state.

A study on defining the strategies in all areas of activity leads to the conclusion that the strategy - regardless of the approached field - is unique. Originally it referred more to the military realm. Now it has become more complex, diverse and multidimensional. Therefore, where there are interests, and interests exist all over the world, there are political and human actions, and the implementation of this policy calls for a strategy: diplomatic, economic, cultural, military, etc. In terms of structure, form, content and especially the interaction of its components, we believe that the strategy remains forever a whole or a system.

¹ Logofătu Gh., Elements of military strategy. București: Military print, 1975, p. 7.

The literature dedicated to the actual issues of the strategy records interesting viewpoints on the content, scope, and conditions implied by the notions intended to be used in this area. Now, the strategy concept is treated differently by various strategic schools. Thus, the most schools in the West take approach trilateral strategy: political, grand strategy (total, integrated, national) and branch strategy (including the military one).

Thus, Liddell Hart in his work „The strategy of indirect actions” mentions for the first time, the division of the strategy into two components: grand strategy and small strategy. If the grand strategy deals with the planning and conduct of the war as a whole, the small strategy addresses the issues of armed struggle. After an analysis of Clausewitz' work „On War”, Liddell Hart mentions that the definition of the strategy given by Clausewitz that „the strategy is the use of the fighting for the purpose of the war”, includes a very narrow range and is reduced only to the use of the military instrument to achieve the goal of the war, when the strategy has other instruments of power available to be applied. Considering the great strategy, Liddell Hart defines it in this manner: „its role is to coordinate and direct all the resources of a country or a group of countries to achieve the political goals of the war, which are set by the country's political leadership. If the military strategy addresses the issues of armed struggle, grand strategy brings together the issues, related not only to the conduct of the war, but also the establishment of the ratio of forces after the war”². In his view, the grand strategy is practically synonymous with the military policy, which directs the conduct of the war, but differs from fundamental policy, which defines its purpose.

General Andre Beaufre also makes a distinction between different levels and forms of strategy: total strategy, general strategy, and operational strategy. Therefore, instead of Liddell Hart's grand strategy, the French general proposes the term of total strategy, considering it more explicit, appropriate to an assigned sense of the total war. He states that „on top of all strategies, subordinated to the government - so to the politics – there is the total strategy designed to conceive the conduct the overall war. Its role is to identify its own mission and to associate different general strategies (political, economic, diplomatic and military), defining the strategy as „the art to use the force or coercion to achieve the goals set by politics” and at the same time „the art of dialectic of the wills that uses force to settle their conflict”³. According to the French General's concept, the notion of „overall strategy” would reduce the autonomy of proper military strategy, would subordinate it strictly to an overall strategic concept, controlled by the political leadership, developed and put into practice by policymakers. The military strategy becomes, thus, a specialized applied strategy, a particular case of the total strategy. These are the arguments whereby Beaufre tried to defend his conception towards the criticisms of the concept of overall strategy, also over the concept of indirect strategy that would, in fact, mean an extension of the military strategy into politics.

The English Marshal John Slessor appreciates that today the strategy can be developed only at a global level. According to him, „the contemporary strategy is a global strategy and to limit it to the particular interests of a country is like a typhoon limited to a pile of potatoes”⁴.

In this context, it should be noted the opinion of the French general Charles Ailleret. According to him, the strategy is only at the level at which the issues of the war are addressed and decisions are made: „the strategy is not an art, a science, a technique or a discipline which would have a well-defined content or would refer to a well-defined object. On the contrary, the term „strategy” defines a level where issues related to the war are examined”⁵.

² Liddell H., *Strategy of indirect actions*. București: Military print, 1973, p. 333.

³ Beoufre A. *Introduction in strategy. Strategy of actions*. București: Editura militară, 1974, p. 10.

⁴ Slessor J., *Strategy for the West*. London: 1954, p. 47.

⁵ Hamon L., *La strategie contre la guerre*. Paris: 1966, p. 58.

The US doctrines have the same terms of policy, national strategy and military strategy (or branch strategy). Thus, the national strategy is defined as follows: „the strategy is the art and science of engagement of political, economic, psychological and military forces of a nation or group of nations to provide the maximum support for the policies adopted at peace times or at war”⁶. So, the national strategy is subordinated to politics and has the mission to achieve the goals set by this, using all the instruments of the power at its disposal. In turn, the military strategy is an instrument of national strategy, whose role is to apply the military component of the power.

The American Professor Leon S. Fuerth, referring to the concept of „grand strategy” in the paper “Great Strategy”, edited by the magazine „Forging an American Grand Strategy: Securing the Future Path through the Complex”, highlights two aspects such as the national security strategy and national defense strategy. Focusing on the tasks of the national security strategy, the author mentions that „the national security is a much broader concept than national defense. When it refers to a grand strategy for America, the national security begins only at the level of physical survival, but still, does not end here. It extends to maintaining our way of life, for ourselves, during our time, and then for the prosperity. Further, especially during our times, the great strategy takes greater dimensions. The physical and moral survival of our nation has become synonymous with the physical and moral survival of the civilization within it exists, and beyond that, it becomes even a matter of survival of the human species”⁷.

Edward N. Luttwak continues the same idea that the grand strategy comes to the position to lead all the components of the state power in order to achieve national interests. At the same time, the American theorist notes that „the strategy gets into the issues of peacekeeping more than in winning the war”⁸. The author refers to the fact that the strategy has the role of maintaining peace by military means. Also, N. Luttwak notes that „the entire contents of the strategy are penetrated by a paradoxical logic, which is proper to it”, that would be a sort of reverse process, which can be noticed in the conduct of the armed struggle. In this context, the author notes that in all spheres of the human activity, except the military activities, the maintenance of a „linear logic” or „usual reason” is seen when during combat actions there is a paradoxical logic that would be a kind of „reverse reason”.

The same topic is addressed in Romanian strategic school. Thus, in the work of Gh. Logofătu „Elements of military strategy” cited above has proposed the term of political strategy. Promoting this term, the authors considers that they can highlight in this way the strategic implications of the correlation between war and politics, between the political and military leadership of the war⁹. According to the authors' perspective, the political strategy cannot be intermingled with the politics for a simple reason, because the political strategy will point out the ways of achieving political goals using the diplomatic, military, economic and informational power.

In the work „The war and the politics in the contemporary era” the Major General Corneliu Soare uses the term of „national defense strategy”¹⁰. The author is convinced that the concept of „great strategy”, „overall strategy” is relevant to big states that have world power status. At their turn, the small and medium states are concerned to understand the strategy so that, not only the military tools, but also all possible tools be used to safeguard national independence and sovereignty, both in peacetime and wartime. Thus, for this point of view, the author insists on the designation of such strategy as „national defense strategy”.

⁶ Merriam-Webster Collegiate Dictionary, 10th edition.

⁷ Anthony A. Cucolo, Forging an American Grand Strategy: Securing a Path Through a Complex Future. Washington: Editura US Army War College, 2013, p. 9.

⁸ Luttwak E., Strategy. Logic of war and peace. Moscow: Editura Universității „Dmitrii Pojarskii”, 2012, p. 5.

⁹ Logofătu Gh., Elements of military strategy. București: Military print, 1975, p.29.

¹⁰ Soare C., War and politics in contemporary age. București: Military print, 1986, p. 121.

Therefore, the national defense strategy will be subordinated to the politics and the military strategy will be subordinated to national defense strategy. While, for the military strategy a way of accomplishing the political goal is the armed struggle, for the national defense strategy the range of tools that can be used is much wider, usually including the following areas: economic, political, diplomatic, military, etc. This means that areas will use specific methods that can be applied depending on the circumstances and situations, in various ways and combinations, in war or peacetime, to achieve a political goal. It is normal that the military tools prevail in wartime, but other tools can not be neglected, which keep their importance. In peacetime, primarily political, diplomatic and economic tools will be used for the settlement of the disputes between countries, to strengthen the security and national independence. Besides the areas and tools mentioned above, other means that contribute in one way or another to achieve the strategic objectives can be considered: scientific research and technological tools, ideological, psychological, legal, cultural and educational tools. The national defense strategy is required to use all these tools according to their particularities and also to provide the correlation, their integration into a single concept. Cornelius Soare points out that an important feature of the strategy, as a field of theoretical analysis and practical activity is the existence of dangers and enemies. These two elements are inherent not only to the military strategy but also to the national defense strategy. The danger of occurrence or widening of conflict situations, aggression, war can be closer or more distant, may have one scale or another, a direction or another depending on the concrete circumstances of the evolution of the international situation. It is necessary that the national defence strategy assess correctly, realistically and appropriately the hazards and, in relation to the conclusions, to establish the way of action to eliminate or reduce them, using primarily the political and diplomatic tools, also taking into the consideration the military tools necessary to beat back any aggression. One of the main tasks incumbent on the national defense strategy is to ensure the consolidation of country's defense capacity through the enhancement of all factors, the contribution of all sectors of economic and social activity which it depends on. And lastly, the Romanian General concludes that a logical correlation between politics and national defense strategy may bring multiple benefits for military strategy, even if at first glance it appears a restriction or constraint of its area of action.

Another hypothesis on strategy is developed by Constantin Onișor in the work „The theory of military strategy” in which two components of the strategy are highlighted: the grand strategy (general, global), which the author calls the war strategy and military strategy. Thus, the warfare strategy is defined as „the art of use, on the basis of overall concept, of all the forces and tools used that the country has in various areas (political, economic, diplomatic, cultural, technical, scientific, demographic, military etc.) and to carry on their actions to achieve the political goal of the war (armed conflict)”¹¹.

The same opinion is claimed by the Romanian colonel Traian Groza that express total or general strategy through the following features:

- the purpose of the strategy is to be a support for the policy in peacetime and wartime;
- the tools of the strategy are extended to all capabilities of the country, in their diversity: political, economic, diplomatic, psychological, military etc.;
- the action forms of the strategy are both violent and non-violent;
- in its extensive sense – total, general, etc., the strategy, although has military tools at its disposal and can use decision-making, planning and action methodologies inspired by the military, actually it is political by its nature.¹²

¹¹ Onișor C. Theory of military strategy. București: Editura Academiei de Înalte Studii Militare, 1999, p. 28.

¹² Grozea T. Tendencies, orientations, controversies in contemporary military strategies. București: Military print, 1991, p. 41.

Another Romanian strategist Gheorghe Văduva, also agrees with the existence of the trinomial: politics, grand strategy (or total), military strategy, making only some changes. Thus, in the work „The integral strategy”, Gheorghe Vaduva highlights that the actual strategy is not the same strategy of the early twentieth century that approached only the issues of the war, but has become „integral” and is responsible for ensuring not only the state's security, but its existence and development. According to him „the integral strategy” includes several strategies, such as economic strategy, information strategy, cultural strategy and not least the military strategy. At the same time, each sectoral strategy is structured at their turn, comprising: the strategy of the forces, the strategy of the tools, actional or operational strategy.

The author highlights a simplified pattern of the levels of strategy development, which would be: the parliaments develop the politics, the governments establish the integral strategy for accomplishing the politics, the ministries make sectoral strategies (economic, cultural, diplomatic, informational, environmental protection, military, etc.), operational doctrines and appropriate tactics and the justice keep a close watch over the rule of law enforcement in this process. There are, of course, an inter-conditioning between these levels. For example, the governments and ministries have competencies and legislative initiatives, the parliaments have special commissions that provide expertise in political areas relevant to the sectoral strategies.

Therefore, from the approaches and assumptions mentioned above, we can conclude that most of the Western strategic schools agree with the trinomial: politics, national strategy (grand, total or integral), sectoral strategy and with reference to the military area - military strategy.

Another interpretation of strategy is reflected in Russian literature. The strategists of the Soviet and later the Russian school, in contrast with the West, promote the binomial: politics, military strategy.

The Marshal Vasily Sokolovski mentions „that the politics in its action are not only intended to set targets for military strategy, but also to create favorable conditions for strategic action. With all military and non-military tools, the politics can mobilize all state resources (material and human) to achieve the strategic goal of the war. At the same time, it coordinates the requirements of the military strategy with the state's possibilities in such way the strategic action to be carried out in accordance with the laws of war. Also, the author points out that „in a war, to achieve successfully the strategic objectives by the military component is necessary to create favorable conditions for other strategic tools such as diplomatic, economic and political”¹³.

In the same work, the Soviet theoretician addresses the principles and procedures for the use, within the war, of the economic and moral-cultural tools of a nation. Thus, the chapters „The strategy and the economy” and „The strategy and moral-cultural factor” highlight the importance of these tools of the state in war, both to support the war effort, as well as tools to influence the opponent.

Another Russian strategist Alexandr Svecin also uses the same binomial: politics and military strategy¹⁴. In his view, the basic mission of political art, in relation to strategy is to establish the political goals of the war. In turn, the political goals must be formulated on the basis of the available resources. In the final statement of the goals, the politics should counsel the strategy so in future the politics would help the strategy, but do not make heavy strategic decision making. Alexandr Svecin emphasized that the role of politics is to create the most favorable conditions for the military strategy, applying for this appropriate diplomatic, economic and informational tools.

¹³ Sokolovski V. Military Strategy. Moscow: Military print, 1968, p. 29.

¹⁴ Svecin A. Strategy. Moscow: Госвоениздат, 1926, p. 17.

The same view is highlighted by the Russian theorist V. Semenov, who, in his work „The evolution and development of Soviet operational art” mentions that „the politics set goals and tasks in the military strategy, determine the tools for the preparation and conduct of the war and not the least directs the whole conduct of the armed struggle for gaining victory.”¹⁵

The same thing is mentioned by the Russian Deputy Prime Minister Dmitry Rogozin. According to him, the politics have the role, both in peacetime and wartime, to coordinate the actions of the national power tools to ensure national security. Referring to the defense, the author points out that the military politics has the main role to take all measures to ensure the defence of the country. In its turn, the military politics will determine tasks and goals for the military strategy¹⁶.

So, the Russian strategic school uses the binomial politics – strategy. Compared to the Western strategy school, where the grand strategy has the role of coordinating all instruments of national power to achieve the political goals, according to the Russian strategic school, this role falls upon the politics and regarding the military area – upon the military politics. The term of strategy in strategic Russian school refers to the preparation and prosecution of warfare and it is named military strategy.

Studying and analyzing this field, we can conclude that although today the concept of strategy is treated differently in both doctrines, the strategy bears the same role to determine the most appropriate ways to achieve the political goals. In our view, we consider rational the approach of strategy concept in the Western variant. So, with reference to Moldova, the strategy segment, which has the role to establish the ways of achieving the political goals, which in the West is called grand strategy, should be named as the national security strategy. The national security strategy will be subject to the politics. It will have at its disposal the tools of the state power (informational, diplomatic, economic and military) that being implemented, will contribute to achieving the goals set by politics.

The sectoral strategies will be subordinated to the national security strategy. This will set goals and tasks for those strategies (informational, diplomatic, economic and military). In their turn, the sectoral strategies will establish ways of achieving the mentioned strategic goals, using the forces and tools at their disposal. Thus, referring to the military field, the way how the armed forces would be applied will be determined by the military strategy.

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¹⁵ Semenov V. A Brief Outline of the Development of Soviet Operational Art. Moscow: Military print, 1960, p. 286.

¹⁶ Rogozhin D. War and world in terms and definitions. Military-political dictionary. Moscow: Vece, 2011, p. 31.

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AVIONICS SYSTEM OF THE COMBAT HELICOPTERS IN ROMANIAN AIR FORCE

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Abstract: *The Romanian helicopter fleet is based mainly on the French IAR 330 platform. The IAR 330 is the Romanian-built version of Aérospatiale's SA 330 Puma helicopter, manufactured by IAR Braşov. During its lifespan the type went through different upgrades, starting with the SOCAT upgrades in the late 90's, continuing with the Navy upgrade program and closing for now with the Modernized (M) and MEDEVAC versions. All the updates were intended to achieve a platform that met the growing needs of the Romanian Armed Forces to enter the 21st century in terms of compatibility and interoperability with NATO/EU allies.*

The upgrade programs were an economical and comprehensive upgrade of IAR helicopters that would resolve existing operational safety issues while significantly enhancing the capability and operational effectiveness of the attack, utility and naval helicopter fleet. A key modernization effort, the upgrades provided a bridge until the acquisition of a new helicopter fleet.

Keywords: *helicopter, upgrade, avionics, combat, fleet, interoperability.*

The bond between advanced technologies and military equipment is well established. Whether we like to admit it or not, major conflicts in history brought, beside incalculable loss, great leaps in technological advance. As did the Cold War that drove, alongside an arms race, also a race in developing technologies with military applications. Part of the development in military technology is avionics, electronics technologies applied on board the aircraft's. Even the term "avionics" comes from combining "aviation" and "electronics". The solution to keep up with the rapid development in technologies in the last decades, from the military equipment point of view, is, beside the obvious but highly expensive solution of replacing it, to upgrade it at least once through its life cycle. Upgrading provides a cost/performance ratio that cannot be ignored, representing more than a temporary solution.

Digital avionics systems development in the Romanian Air Force

In the beginning of the 90's the Military Aviation Command (what was at that time the Romanian Air Force) was, regarding the amount of assets, in a not so bad situation. The helicopter fleet, for example, had about 200 aircrafts and was comprised of IAR 330 "Puma", IAR 316 "Alouette", Mi-8, Mi-17 located in 12 airbases, regiments, units or subunits. The quality of the equipment, on the other hand, was poor, due to the economic situation imposed in the last decade by the communist regime, the years into service and especially of the outdated design. From a technological point of view, the aircraft in Romanian Air Force (RoAF) fleet belonged to the 60's, when they were designed and entered production. With the decision of Romania to become a full member of the Euro-Atlantic community and the sign of the Partnership for Peace (PfP) document, the technological drawbacks were more than evident and so was the need for compatibility of equipment with the allies in order to take part in combined exercises and aeronautical activities.

Due to this reasons, The Romanian Air Force decided to upgrade the aircrafts in service which had enough time in service left to justify the investment. The program started with the decision to upgrade the Mig-21's in service. The contract is signed in 1993 with

Aerostar Bacau, which already had a history of 25 years in repairing Mig-21's, together with Elbit Systems Ltd. from Israel¹. The upgrade resulted in increased capabilities due to the modern avionics system, compatible to that of fifth generation fighter jets. A total of 110 aircrafts were upgraded, in three different versions (LanceR A – air to ground; LanceR B – air to ground two-seater; LanceR C – air to air) and all were compatible with western navigation, armament and communication systems. All versions have two Multifunctional Displays (MFD), Head-up display, helmet mount targeting system and Doppler multimode radar. The upgrade program resulted in what is probably the most capable Mig-21 version in service, becoming the first ever operational aircraft to make use of the helmet mounted targeting system, enabling the pilot to aim targets by simply moving its head and also the first aircraft to make use of both western and eastern ammunition in the same time².

Having the experience of upgrading the Mig-21 and identifying the need for a lead in trainer compatible with the new aircraft, the Air Force decided to start producing the new aircraft IAR 99 “Hawk” in 1996. The aircraft, in the basic version, not digitalized, was in production since 1987, 17 aircrafts been already delivered at that time. Aerodynamics capabilities of the aircraft were more than adequate for a training/light attack fixed wing aircraft, so the development centered more on fitting with modern avionics. Alongside Romanian companies already involved in developing the project, Elbit Company was selected to be the integrator of digital solutions and the solution implemented is compatible with 4th generation fighter jets, being inspired by the avionics onboard the Mig-21 LanceR, but adapted to the needs of IAR 99. The avionics system, that incorporates communications, navigation, identify friend or foe system (IFF) and cockpit layout are similar to that of F-16 MLU. IAR 99 “Hawk” aircraft is fitted with suitable systems for its training purpose, such as video recording and mission debrief systems and in-flight mission simulations based on real time data transmissions between aircrafts and ground simulators.

At the same time and based on the same requirements, the need for modern helicopters, compatible with western systems and able to provide support to other services was increasing. The Romanian helicopter fleet was comprised mainly of IAR 330 “Puma”. They were built under license by IAR Brasov, based on the French Aerospatiale SA 330. More than 160 aircrafts were built in the factory near Brasov, 104 being delivered to the Romanian Army, the rest going to export. Until 1977 the “H” basic type was produced and then, with the development of composite blades, the “L” version is developed. Upgrading the helicopter to a newer version was an objective of the IAR engineers since 1984 but digital solutions were not available in Romania at that time. The answer was the partnership between IAR Brasov and Elbit Systems – SOCAT program (Reconnaissance and Anti-tank Electro-optical System) that had a considerable increase in helicopter capabilities. The first prototype flew on 26th May 2017 and in 2001 the first helicopter was delivered to an operational unit. A number of 25 helicopters were upgraded in total, including the prototype. Upgrading the helicopter and having two squadrons operating it allowed the Romanian Air Force to operate for the first time since the end of the WWII in an operational theatre. In 2005, Romanian Air Force, with four IAR 330 SOCAT helicopters, operated alongside EUFOR, under the EU mission, in Bosnia and Herzegovina, quantifying 1200 flight hours in over 600 missions. The mission reassured, along the level of training, the success of the helicopter upgrade program.

The next upgrade program for helicopters was the IAR 330M NATO, an upgraded version designated for transport with modern avionics, lacking the armament and electro-optical pod of SOCAT version. Besides other upgrades and developments, the new program implemented weather radar. A total of 12 helicopter were upgraded to 330M standard

¹ Victor Strâmbeanu et al., *The Romanian Military Aeronautics*, Bucharest, Curtea Veche Publishing, 2013.

² Vasile Nuțu, *Trageri aeriene și bombardament*, București, Ed. Academia Tehnică Militară, 2000.

between 2005 and 2008, three been designated for medical evacuation (MEDEVAC) missions and equipped accordingly (medical kits, rack, litters).

At the same time IAR factory in Brasov and Elbit Systems developed an upgrade program to fit the needs of the Romanian Navy for a helicopter. This version, consequent to the SOCAT version, has certain upgrades needed to operate in maritime environment and operating from frigates, such as buoyant systems, pliable blades, maritime search radar, landing hook, electric hoist. Navy ordered three helicopters, first being delivered in 2007. They are currently operated from frigates for Search and Rescue (SAR), MEDEVAC, maritime surveillance.

Main elements of the digital avionics system onboard the upgraded IAR 330 helicopters

The basic of all the IAR 330 helicopters avionics upgrade programs is the Fire Control and Navigation System (FC&NAV) of IAR 330 SOCAT that we are going to use as a reference. FC&NAV is an advance avionics system, automated and integrated, that provides accurate navigation, attack mission execution with a high probability to hit and enhanced survival rate.

The system aids target visual identification and reduces crew overload due to “hands-on” and “head-out” operations during flight and attack missions. It controls antitank missiles, turreted gun, rockets, chaff and flare. This combination of armament and ammunition increases the survivability level of the aircraft and provides an appropriate solution to counter threats encountered on the battlefield. Integrated monochrome/colour displays, day/night helmet display and “Hands on Collective and Stick” (HOCAS) system was the optimal solution for low-level, nap of the earth flights.

FC&NAV system functions are: man-machine interface that reduces crew workload during flights; advanced navigation capabilities that allow precision flights; electro-optical reconnaissance system for day and night surveillance, target identification and acquisition; onboard sensors integration while performing data integration and display; communication through voice and data secure transfer between aircrafts and/or ground stations; Built-in-Test/BIT mechanism that allows crews and ground teams to check the avionics system either in flight or on the ground; planning and debriefing capabilities integrated into the system and data transfer capabilities between the avionics system and ground Mission Planning System (MPS).

The core of FC&NAV is the Helicopter Multi Role Computer (HMRC), which is the main computer that controls the missions, armament, digital map and input/output sources. HMRC interacts with different sensors and equipments onboard the helicopter and with other avionics units. This is done through a wide range of interfaces that provide command and control. HMRC is the integrator element of the avionics and the main element of control of the system that coordinates sensors, displays and modules. The main subsystems of HMRC are:

a. Navigation subsystem – based on an integrated Global Position System (GPS) and Inertial Navigation System (INS) – EGI, it receives information from several sensors onboard the helicopter: Helicopter Air Data System (HADS), radar altimeter, electro-optical reconnaissance system, fuel flow, main rotor data and engines data. The subsystem computes all the data and provides information for the ballistic elements, target acquisition, missile engagement. Data from external sensors are processed to provide the crew with fuel flow information, time until fuel depletion, heading, altitude, warning messages.

b. Armament subsystem – controls the armament and ammunition onboard and provides information about the type of weapons and ammunition onboard and selected by the

crew. The system has all the interfaces necessary to connect to all types of armament and the software necessary to perform high precision engagement, based on crew selection and ammunition characteristics. The software computes the conditions and ballistics necessary to fire taking into account the selected weapon characteristics, ammunition characteristics, weather conditions and constraints uploaded.

c. Modular Integrated Display and Sight Helmet (MIDASH) – designed as a dual day/night system that incorporates a wide variety of physical protections and operational capabilities. The helmet provides flight data while maintain the view outside of the cockpit (Head Out) and targeting capabilities using onboard sensors that relay on generating a Line of Sight (LOS) by magnetically monitoring the gunner/pilot head movement inside the cockpit. Vital information, such as navigation data, flight data, different warnings and alerts, armament status are displayed on the helmet visor while it operates as an integral part of the armament system. To perform these tasks, the helmet comprises of two distinct elements: the helmet shell, personalized for each crew member, that provides physical protection and communications and a set of Helicopter Retained Units (HRU) that allow the wearer to look through them during the day and imposing an intensified image by night, while superimposing information relevant for navigation, flight or employing the armament. Helmet position for computing the Line of Sight (LOS) is magnetically determined by a set of transmitters on the helmet and receivers on the helicopter and the physical connection between the helmet and the helicopter is done by a quick disconnect link for emergency evacuation.

d. Observation System (OS) is a multisensory payload, gyro stabilized, for day and night reconnaissance, target identification and acquisition and distance measurement by a Laser Range Finder (LRF) that has the capability to be retrofit into a Laser Designator (LD). Inside the payload are a CCTV camera and a Forward Looking Infrared (FLIR) camera. The system, mounted on the front part of the helicopter, can automatically track locked targets and report their position to the armament system to compute the ballistic trajectory.

e. Electronic Warfare (EW) subsystem is an independent system that provides identification and counter-measures against targets that threat the helicopter and have an electromagnetic fingerprint, either continuous, pulse or laser. The system comprises of two units: Radar and Laser Warning System (R&LWR) unit and Chaff & Flare unit.

f. Weather Radar – provides the crew with information regarding thunderstorm clouds formations and turbulence associated with them. It was fitted on IAR 330 Puma M version by replacing the OS system of the SOCAT version. The radar has a range between 10 to 200 NM and a detection angle of 100° on horizontal axis and 60° on vertical axis. The detection system is completely gyro stabilized until 30° angles that allows removing unwanted ground reflections during moderate manoeuvres of the helicopter. The display provides the crew with an image of the scanned area vertical section, using intuitive bright colours to point out high intensity zones.

CONCLUSIONS

The SOCAT upgrade program managed to develop a helicopter capable to perform ground attack missions in support of ground troops, battlefield reconnaissance with real time data transmission, Search and Rescue, insertion and extraction and transport, day and night, all weather. It is capable of detecting, identifying and engage enemy forces at low distance, with high precision and to perform low level, nap of the earth, flights at long range with high accuracy.

Now being at the middle of their life cycle, IAR 330 SOCAT helicopters are going through an intensive overhaul that will extend their lifespan for another 15 years. If the

avionics system proved to be technologically advanced, reliable, able to comply with the demands encountered on the field, operating for more than 15 years in all weather conditions in different types of missions and operations lead to identifying the limitations of the platform, like range, maximum altitude, payload. So, in order to extend the operational capabilities of helicopter structures it is necessary to determine if an acquisition program for dedicated attack helicopter, with high dynamic capabilities, adequate active and passive self protection, integrated avionics with synthetic vision capabilities and digital engines management is suitable now.

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THE RUSSIA'S APPROACH TO HYBRID WARFARE

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Abstract: *Today media often mentions the so-called hybrid wars. Although most articles do not explain the concept at all, often they misinterpret or use such misleading interpretations. How should one really understand the concept and hybrid war tactics regarding Russia operations? The concept is very difficult to understand because of its complexity and abstraction in theory, when explained outside a concrete example. This is a part of the art of hybrid war. This article introduces hybrid long-term threat and explains its aims. After that, the article describes common tactics (methods) and phases used by Russian Federation aggression against Ukraine (and to a lesser extent, Russian aggression against other countries). The way in which Russia has used force against Ukraine since early 2014 has prompted some observers to state that it is engaging in "hybrid warfare". Rather than openly using military power to secure its political objectives in Ukraine, Russia has adopted a subtler approach intended to give the Kremlin "plausible deniability" while reducing the costs associated with engaging Ukraine's armed forces directly.*

Keywords: *hybrid war, hybrid threat, hybrid warfare, terrorism, criminality, hybrid conflict, civil war.*

The Russian-Ukrainian war, which began in 2014, raised global approach to a new term "hybrid war", which immediately had a massive impact in the media¹. Strictly speaking, among the terms employed by international security experts, the term "hybrid war" appeared a little earlier, in 2005, and was used in particular to analyze Russia's aggression against Georgia in 2008²; in fact, a considerable part of the "arsenal" of hybrid warfare was developed and tested in practice by Russia in preparation for the invasion of Georgia. However, only the Russian-Ukrainian conflict showed that we are not talking about a unique situation, but one that designed a diagram in a thoughtful and elaborated way by engaging the political, informational, ideological and military occupation of a country - a system that is universal and can be extrapolated to slight changes in a variety of country - victims of bullying. A number of journalists, politicians, and experts in international security rushed to conclude that such a war is a "hybrid" one and that it will become the main type of armed conflict of the 21st century³. Unsure of such estimations generalizing, I am sure it will spread the practice of "hybrid conflict", at least in Eastern Europe, Southern Caucasus, Central Asia and other regions, potentially related to the vital interests of the Russian regime. Theory and practice of the "hybrid conflict" today is the greatest achievement of Russian military and political thought and considered (not without reason) as the most effective method of subjecting neighbours to Kremlin dictatorship. Thus, in all cases aggression from Russia should involve the application of the primarily arsenal of forces leading to "hybrid war", like the ones used in Ukraine in 2014-2015. However, the logical development on a global scale

¹ <https://inmoscowsshadows.wordpress.com/2014/07/06/the-gerasimov-doctrine-and-russian-non-linear-war> accessed on 25 February 2017

² <http://www.nato.int/docu/review/2015/Also-in-2015/hybrid-modern-future-warfare-russia-ukraine/EN/>, <http://www.comw.org/qdr/fulltext/0712hoffman.pdf> ; <http://www.wilsoncenter.org/sites/default/files/7-KENNAN%20CABLE-ROJANSKY%20KOFMAN.pdf> <http://www.atlanticcouncil.org/publications/articles/hybrid-warold-wine-in-a-new-bottle> accessed on 26 February 2017

³ Gray, Colin. The 21st Century Security Environment and the Future of War. // Parameters Winter 2008-9: 14—26.

makes the Kremlin regime to implement quickly their aggressive plans in relation to the neighbouring countries. This favours Russia to win a conflict, which triggered rapid decline of its economy while the economic crisis needed urgent reinforcement and strengthening of Russian society around the image internal and the external enemy, together with constant legitimacy of the regime in the Kremlin, showing foreign policy and military victories. Thus, the prospect of extrapolation of "hybrid war" from Russia to Ukraine and to the Baltic, South Caucasus and Central Asia, is very likely in the short-term outlook. To prevent the success of alleged conflicts of Russia prerequisite requires the clear understanding of the essence and nature of hybrid war as a special type of political and military conflict and the forecast of possible actions of Russia in the early stages of a "war hybrid".

Despite the constant references to the term "hybrid war" in the media, so far no one has given a full definition of "hybrid war" and has not explained how it is different from other types of military conflicts. In my view, "hybrid war" in the most general form that can be defined as a state military aggression against another, apparently disguised as an internal political conflict in the country being the victim of aggression. Do not confuse aggression with such a widely known form dating back to the years of "cold war" with the direct intervention (Angola, Vietnam, Ethiopia, etc.) and indirect (Mozambique, Southern Rhodesia, etc.) to the Member State and the Soviet bloc NATO's civil wars in the countries of the "third world". At the time of the "cold war", the civil conflict was caused by internal factors, developed independently in each country, and only modified because of outside interference. In the Russian modern "hybrid war", internal conflict need not be present - it is imitated by the Russian media regardless of the current state of affairs. We talk about indirect military intervention, only superficially disguised as "civil war" in the country being the victim of aggression⁴.

A key feature of the "Hybrid war" is a combination of two factors apparently mutually exclusive: the direct jurisdiction of the Russian war (by taking all political decisions and military at the highest level of Kremlin leadership to target direct participation of the armed forces Russian units) and rejection of the public participation in the Russian in conflict.

As we shall see, understanding this "paradox" is a combination of extremely important and necessary political and military decision-making in countries which are the victims of aggression and the international community. The misunderstanding the nature of war, imposed by the Russian Federation, seeks to present as "independent parties in conflict", the political forces and people who really do not take any decision independently, which do not affect the decision-making and do not inform the Russian leadership about the plans and decisions. Attempts to negotiate with these people and political forces remain profitable exclusively within Kremlin illusion of "civil conflict internally" in the country which is the victim of aggression and leads to loss of values (especially in the early stages of the conflict) while the discussions are in vain.

To predict the development of a "hybrid conflict", we need to remember that the logic of development does not coincide with the logic of development of internal political conflicts. The logic of development of civil conflicts has been well studied by contemporary political science, location and phasing of the development of certain military arsenals and political decisions based on reaching a reasonable compromise between the principal parties to the conflict and subsequent location of radical elements.

Due to the paradoxical nature of "hybrid war" described above, apparently disguised as civil conflict, natural temptation arises to predict the evolution of conflict in accordance with the classical and application to impose peace settlement mechanisms described above domestically. Such an approach is doomed to failure as "hybrid war" in fact, is not logic

⁴ Попов И. Матрица войн современной эпохи, http://nvo.ng.ru/concepts/2013-03-22/7_matrix.html accessed on 25 February 2017

subject to conduct internal conflicts. For the purposes of operational and strategic "Hybrid war" is a military operation completely planned a state against another, which fully develops the logic "classic" planned and conducted in a single military staff. This understanding of "hybrid conflict" allows forecasting the course of its development: for clues camouflaged outside of "civil conflict" should be still seen throughout the operational plan, unique, developed and implemented by the management of political and military of a foreign state. Developments expected it should be based on assessment of military and economic opportunities foreign policy and taking into account the domestic political situation of the aggressor state and not the circumstances of the state - the victim of aggression; last creates more or less favourable environment for foreign intervention but in no case the primary causes of the conflict⁵.

Some of the "hybrid war" tools were developed by ideologues, propagandists, and Russia military intelligence long before 2014. If Russia's participation in the Armenian-Azerbaijani war (1992-1994) and the Tajik civil war (1992-1997) described the layout of "external involvement in the conflict appeared" armed conflicts in Transnistria (1992), Abkhazia (1992-1993) and South Ossetia (1991-1992) were in largely caused outside of the Kremlin leadership since then. During these conflicts also worked for the first time the method of legitimizing international Russian military aggression in the invasion force operating initially informal, unmarked and disguise themselves in paramilitary and after achieving military success of legitimacy in international negotiations as "contingent of Russian peacekeepers".

Examples of "early experience of Hybrid war" can be called the initial phase of Russian-Chechen War (November-December 1994), when the territory of the unrecognized Republic Ichkeria by the international community, but de facto independent since 1992, has been committed regular army units Russian invasion, camouflaged under the action "Chechen military commanders, raise against President Dudayev". The military operation has since failed combination with the presence at that time in the Russian Federation, the independent media which forced the government of the Kremlin to recognize publicly the participation of Russian troops in battle, and legitimization of period to "restore constitutional order ". It is significant that, despite the illegal apparent actions of the Russian army (even under Russian law) early-stage "hybrid" of Russo-Chechen subsequently all these actions were justified by the principle of "political expediency" creating a precedent of impunity for all subsequent conflicts involving Russian Federation.

Russian-Chechen War of 1999-2001, also has obvious characteristics of "hybrid conflict", so to legitimize these illegal actions (military aggression after signing the peace agreement in 1996 and Khasavyurt Ichkerian overthrow the government, which was elected in internationally recognized elections held under the supervision of the Organization for Security and Cooperation in Europe (OSCE) in 1997), the Kremlin successfully used an important instrument of "hybrid warfare" that we met repeatedly in the Russo-Ukrainian war, namely imitation alleged "failure" of the legitimate government of the country - victims of bullying control of the country and the activities of armed groups in their country.

Another part of the toolbox of "war Hybrid" - to create the image of propaganda of the enemy to find weaknesses in the system of collective security and international neutralizing intervention of Western countries - was implemented successfully by Russia during the aggression against Georgia in 2008 - the so-called "peace enforcement operation" (another new term introduced by the Russian Federation, but has become more widespread than "hybrid war").

⁵ Хоффман Фрэнк. Гибридные угрозы, <http://navoine.info/hybrid-dange.html> accessed on 27 February 2017

Thus, in 2014, the main instruments of "hybrid war" were generally developed and some of its elements were tested in a series of local conflicts. However, namely the war against Ukraine, started by the Russian Federation in the spring of 2014 after the failure of attempts of the Kremlin to limit the interference of the "classic" out civil conflict internally (with a minimum direct participation of Russian Federation to contribute to maintain the regime of pro-Russian President Viktor Yanukovich finally dismissed during the course of the revolution diligent national democratic in November 2013 - February 2014), the entire arsenal of "hybrid war" was applied by Russia systematic and full-scale, and of itself "hybrid war" took the form of draft military-political Russian finished, click on the "template" extrapolated to any country selected for aggression. In Russia, the military plan of intervention against Ukraine was called "Russian spring project – 2014".

By 2014 the arsenal of means and methods of the "Hybrid war" generally had been developed by political scientists in the Kremlin and the Russian military. Most of these tools and techniques individually, as mentioned above, they were tested preliminary in various local conflicts in post-Soviet space, which allowed the Russian Federation to the beginning of the war against Ukraine combine them into one side of the invasion, known as "project - Russian spring". As the plan "Russian Spring" was conducted in parallel in different regions of Ukraine, we have a rare opportunity during a military conflict to a comparative analysis of several options for the early stages of a "hybrid war" and to generalize the results to identify a joint plan of a "hybrid war" as it now seems the Russian leadership and how it might apply to other countries - future victims of Russian aggression, with minor variations in local (such as local variations in various operations "Russian spring in Ukraine - 2014", with individual elements escape during previous Russian Federation assaults against Georgia and Moldova).

In the most general form, Russian plan to conquer the country namely includes the following phases:

1. Phase 1. "Zero" or "latent" - phase of psychological war and propaganda. At this stage of Russian objectives are:

- Psychological training of Russian society to the "necessity" of Russian military intervention in the country selected for assault;
- Psychological preparation of society in the country - the victim of aggression, which should weaken the resistance invasion;
- Training in the country - the victim of an aggression, pro-Russian groups of influence that will be directly involved in the next stages of the invasion;
- Preparing public opinion and political position of the Western countries that have legitimized in the eyes of the international community regarding the aggressive actions of the Russian Federation - the country victim of aggression and nullify international collective security mechanisms.

This phase has specific timing and can be done indefinitely, to create favourable conditions for moving to the next phase of "hybrid warfare". Unlike the next stages of the conflict, this phase does not necessarily imply concentration of financial resources and significant human, so it can be carried by the Russian Federation at the same time against several countries - potential victims of aggression to allow for attacks further on any of them, if favourable circumstances to move to the next stages (or, if this is dictated by internal and external circumstances of Russia itself).

2. Phase start direct invasion can be described as "phase of destabilization" and at the same time as the "battle of images televised"⁶.

In this phase the Russian Federation involve elements most radical of its influence group in the country - the victim of an aggression and a limited number of professionals in the

⁶ <http://korrespondent.net/world/3526564-konhress-ssha-zapretyl-voennui-podderzhku-batalonaazov> accessed on 28 February 2017.

security services and the army of the Russian Federation to destabilize the situation, creating an atmosphere of chaos and anarchy, imitation of "civil conflict" in the country - the victim of aggression. Meanwhile Russian propaganda machine is enabled to create in Russian and western media space a certain "image" which has the mission to legitimize in the eyes of Russian society and the international community follow the Russian Federation. The main objectives of the Russian Federation in this phase are:

- Imitation of "civil conflict" in the country - the victim of an aggression;
- Formation of a negative image of Russia's invasion potential adversaries;
- Creating the illusion of "weakness" of the country's legitimate government and "lack of control" from the legitimate authorities of the country over the territory (all or part of it) and various "militias" (real and fictional);
- Training "image victim of violence" among Russian supporters in the country - the victim of an aggression, imitation 'civilian repression "by the authorities of the country or" uncontrolled power of radical elements ".

3. Logical continuation phase is described in the next phase - "imitation civil resistance". After simulating the "cruel repression" groups pro-Russian under the influence and direct leadership of officers FSB (Federal Security Service) and GRU (Main Directorate of Information) of the federal them Russian and direct participation of special forces of the Russian army simulates creation "civilian self-defence", which are supposedly intended solely to "protect the civilian population subjected to repression".

4. After the official proclamation of the resistance phase is immediately followed by escalating violence and provocation - "the first phase of blood". The direct objective of the Russian Federation at this stage of the conflict - challenge local authorities to bloodshed, to be tragically demonstrated immediately by the Russian media, which will lead to compromising Russian authorities in the eyes of the world and legitimizing Russian transition to next phase action⁷. Another objective in this phase is to achieve a "point of no return" for groups pro-Russian hinterland - victims of invasion, which aims to achieve such a degree of mutual hatred and a critical mass of sacrifices made, which is impossible to achieve direct agreements between pro-Russian forces and local legal authorities of the country - victims of aggression without "mediation" and without "peacekeeping forces" of Russia.

5. The next phase can be characterized as "imitation phase of subjectivity". The purpose of the Russian Federation at this stage is to simulate the creation of a "government alternative" of groups pro-Russian influence, which actively participated in previous phases of the conflict, which simulates the transition from "groups of self-defence" to "legitimate representatives you will of the local population ". The key point of this phase is to simulate the pro-Russian groups control over territories, lack of control over these territories from the national government and, consequently, to simulate the "equality of arms" in the conflict of these groups at national government. In this phase of the conflict can, if necessary, to involve a larger number of regular units of the Russian army camouflaged formally "paramilitary" subordinate "local self-government".

6. To complete the logic described in the "subjectivity phase simulation" is the next step, which may be related characterized as "legitimizing the invasion phase, or phase referendums". In this phase, the aim of the Russian Federation is legitimizing international employment or through imitation of the whole country "will of the people" (referendums, "elections" and so on). Such events allow the Russian Federation in the future to ask the national government (if it is not overturned during the last phase of the conflict, and has retained control of part of the country) and international community to recognize the occupation "authorities" as equal subjects of the national government and continue the

⁷ <http://uapress.info/ru/news/show/25031/> accessed on 28 February 2017.

negotiation process as legitimate military invasion of Russia by "seeking military aid in order to protect the civilian population" by these "popular elected local authorities."

If the previous phase of the conflict has not resulted in a complete transformation of the national government and replaces it with a puppet regime, the next phase of the conflict is a military invasion of large-scale Russian Armed Forces, which imitates the "war between the national government and the self-proclaimed government in uncontrolled territories ". At the same time, we taken into account the widespread deployment of conflict and massive participation units of the regular Russian army, formally they all occur under the guise of "paramilitaries" that makes "local autonomy" in the occupied territories of the Russian Federation.

The final desired for the Russian Federation to complete this phase of the conflict is a military defeat of the national government and increased power pro-Russian puppet regime throughout the country. A variant of the "minimum" is to achieve a state of "deadlock" when the national government can not overturn, but loses control of part of the country, and is forced to legitimize the territory by recognizing the "independence" and leadership puppets " self-government "and the legalization of their armed forces and the legitimacy of Russia's military presence in the country as" peacekeepers ".

Finally, if it is impossible to hide further direct participation of Russian Armed Forces in the conflict is reached phase, which has not yet been reached during the Russo-Ukrainian (although it is expected by most analysts) but already previously demonstrated in Moldova and Georgia phase of public recognition of unilateral invasion of Russia by "placing peacekeeping forces" and "peace enforcement operation".

During the course "Conflict hybrid" within the countries of post-Soviet Russian Federation leadership has set a series of targets, which together constitute the project of creation called "Russian World", which opposes the entire "Western civilization" and falsely claims not to be, either after large size, one country 'alternative civilization project'.

"Russian World" is a kind of "Matryoshka" which is the centre of the Kremlin, and then set a series of "concentric circles", which correspond to different degrees of control over the situation in the Russian political and military leadership. In the first circle of the "Russian doll world" is the Russian Federation, control over which over the last 16 years of government it has totally Vladimir Putin who has become increasingly authoritarian. For the Russian Federation, within the "Russian World" provides conservation indefinite time (ideally - forever) direct control "manual" Kremlin (the so-called "power vertical") with the complete liquidation of the society institutions civil, independent media, mimicking formal elective procedures when really authoritarian character of governance and lack of leadership alternative to the current government, with constant action propaganda apparatus ideological state (replacing the independent media) and natural resource conservation-oriented economy with a total dependence on the business of government. This objective was achieved virtually by the Kremlin.

The next circle of the "Russian world" means independent states, former Soviet republics of the USSR. Envisaged for them is the progressive realization of complete control of the Kremlin, which has already been done for the Russian Federation. In keeping formal status of "independent states" project, "Russian world" in these countries involves establishing a puppet regime under the control of Russia and signs of gradual loss of sovereignty, except coat of arms, flag and anthem.

It should understand that the purpose of the Russian Federation regarding the post-Soviet space, not just installing puppet regime that facilitates the implementation of the Kremlin's foreign policy and independent control of the situation inside the country. Such regimes are not only as a transitional stage, it is necessary to establish full control of the Russian Federation on the post-Soviet countries. The concept of the "Russian world" Kremlin

does not rely on "allies", the ultimate goal is to establish complete control directly the Russian authorities on post-Soviet countries.

Sequence of integration an independent country earlier in "world of Russian" implies (after establishing puppet country of the pro-Russian) a series of internal transformations and movements of foreign policy, which generally should be impossible country out of its orbit of influence "Russian world", regardless of the wishes of local authorities. Thus, the puppet regime pro-Russian must gradually shift substantially all of its functions directly from the Kremlin or controlled by the Kremlin for corporations and Russian institutions and ultimately retains only a decorative function, such functions have "authorities" autonomous entities within the Russian Federation.

The next circle of the "Russian World" is a number of countries of Central and Eastern Europe - mostly former members of the "Warsaw Pact" (countries "Visegrad Group" and the Balkans, including Greece) and a number of countries of the "third world" (particularly Syria and other Arab countries, Turkey, Iran, India, Brazil, Israel). In these countries, Russia will not ensue total control, but provides establish the possibility of having such a relationship in which these countries guarantee to be allies of Russia in all foreign policy, where Russia, at least, would have a "veto" on all major foreign policy decisions.

The next circle of the "Russian World" refers to continental states of Western Europe, from Germany and Austria to Spain, Portugal and Scandinavia - which, under the "Russian World" plays the role of "neutral zone" between Russian and Anglo-Saxon countries (discussed in the concept of "Russian world" as "eternal enemies" and the only worthy opponents of the Russian Empire) and "useful idiots", acting as a pro-Russian corridor in the international Russian-American confrontation on the international arena. For these countries, etc. it is provided a " very soft control ", achieved through three main mechanisms: secret control, direct political elites (both ruling and opposition) over their involvement in corruption schemes, control messages in local media financial agreements with their owners, and through a "complementary feeding" systematic local journalists and intellectuals as well as setting preferences in local economic projects with large Russian corporations benefiting in return from the use of these capacities of Russian corporations in their countries.

For the implementation of the project described conditions, it is necessary the abolition of NATO and the European Union in their current form. Currently, the Russian Federation is making significant efforts to invest significantly in support of the so-called "Euro sceptics" in EU policy circles and in anti-American movements, that become anti-NATO ones in Europe.

Thus, Russia's aims and objectives are:

- The expansion of NATO's internal opposing interests of the US, UK and continental Europe until the dissolution of the Alliance;
- European expansion by supporting internal "Euro-sceptics" and expanding confrontation between Britain and "old Europe" to dissolve the Eurozone and the European Union and reformat it into an ineffective advisory body to the Council of Europe and OSCE;
- Creation of the "Russian World" made in three consecutive "zones of influence": the total area under the direct control of the Russian Federation, including the post-Soviet area " soft control " which includes some countries from the Central Europe and "third world" and the "useful idiots pro" of the countries of Western Europe. The location of the Baltic States in this system is defined in the area of the Russian Federation total control.

Russian military aggression against Ukraine 2014-15 marked the beginning of a new phase of the construction project of the "Russian world", namely the Russian Federation transition to the establishment of the direct political and military control over the post-Soviet states.

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ENHANCED FORWARD PRESENCE AND TAILORED FORWARD PRESENCE –TWO COMPREHENSIVE CONCEPTS ASSOCIATED WITH THE FIGHT AGAINST THE HYBRID WARFARE

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Abstract: *Combating hybrid threats is among the key issues that are in the forefront of NATO actions. Enhanced forward presence and Tailored forward presence are two of the complex measures, which were decided at the NATO Summit in Warsaw, in 2016. They are complementary parts of the effort to strengthen NATO's eastern flank, including the approaches against hybrid war (type of confrontation that combine various dimensions exceeding the military dimension, as well: cultural identity space, cyberspace, strategic communication, outer space, cognitive space and involving non-state and state actors). The Allies are in the implementation stage of these concepts in all three dimensions: in the air, at sea and on land¹. Enhanced forward presence is developing in Estonia, Latvia, Lithuania and Poland and Tailored forward presence is developing in the Black Sea region. The hybrid warfare is one of the biggest challenges for the defence and security of Romania.*

Keywords: *Hybrid war, Enhanced forward presence, Tailored forward presence, NATO Summit, Black Sea, Romania.*

Conceptual clarification

The mix between particularities of conventional war and unconventional aspects, such as propaganda, which add actual actions, such as cyber-attacks, it is one of the biggest challenges to security and defence of Romania on short, medium and long term.

Briefly, hybrid warfare is not a new concept. On the contrary, the destabilization of the opponent through unconventional methods and subversive tactics associated with conventional methods of struggle was and it still is an ancient strategy. The nowadays challenge consists in the addition of cyber dimension and undefined opponents categories at the previous elements. Moreover, these opponents cannot be defined as belligerents given that it is no longer up to date the classic notion of the Declaration of war², whereby a state officially announced another state about the end of peace and the transition to the state of war.

We are witnessing at perfection of the subtlety regarding the merge of *hard power*, *soft power* and *smart power* dimensions. This development requires increased cooperation between international actors with responsibilities in the field of defence and security, such as United Nations (UN), North Atlantic Alliance (NATO), European Union (EU) and Organization for Security and Co-operation in Europe (OSCE). It is an unclear delimitation between *hard power* dimension, which is managed mainly by NATO, the *soft power* dimension, whose management is mainly under the umbrella of the EU and *smart power*. This last item is a dimension that can be characterized as been obviously under the umbrella of the OSCE, but it is present in some actions of the UN, NATO and the EU. And because it

¹ http://www.nato.int/cps/en/natohq/topics_136388.htm

² Collective – Congressional Research Service, CRS Report for Congress, *Declarations of war and Authorizations for the Use of Military Force: Historical Background and Legal Implications*, 2007.

involves preventive interventions which cannot be considered as assaults that take place in the name of defending human rights, one example being the US intervention in Libya³.

Lieutenant General (ret.) James Mattis⁴ and military expert Frank G. Hoffman⁵ conceptualized this crossroad of the dimensions. Both of them outlined⁶ the concept of *Four Block War*. This represents the ability of an actor to face threats and confrontations by carrying out, simultaneously, on four dimensions: military, peacekeeping, humanitarian and psychological-intelligence⁷. In Frank G. Hoffman's vision, the hybrid warfare is a manifestation of a dynamic force through simultaneous and adaptive application of the conventional and unconventional arms, terrorism, and organized crime – all of them applied in a military operations theatre in order to achieve political goals.

Mattis - Hoffman theory is a development of the theory launched by Nathan Freier⁸, one of the first researches who have operationalized the concept of hybrid warfare. According to him, hybrid warfare involves four types of threats:

1. Classic threats
2. Unconventional threats
3. Terrorist threats
4. Disturbing threats

It is evolving the definition of the concept of hybrid warfare, particularly because of its unconventional elements including measures of intelligence, domestic political pressures, and violation of the international law, violation of the rule of law, propaganda, manipulation and disinformation tactics, economic and financial sanctions, subversive actions, sabotage, cyber-attacks etc. Briefly, these entire mean exploiting the weaknesses of the enemy.

The terrestrial dimension of hybrid warfare requires flexible and adaptable structures, which apply the combined tactics. As a result, the specific risks of the hybrid warfare contain intelligence and operations activities, military challenges, cross-border organized crime, and domestic organized crime. The expression of the hybrid warfare in its current shape is present in the Romanian's vicinity, in Ukraine. Also it is distinguishable in Iraq and Libya, among the relation between Iran and Hezbollah and the attack strategies of the terrorist organizations such as ISIS/Daesh and Boko Haram.

The update of the NATO posture

Over just six years, from 2010 to 2016, the security context has changed radically, which caused an update position of NATO. This development is reflected by the changes of the NATO's Strategic Concept.

The current Strategic Concept⁹, which was adopted at the Lisbon NATO Summit in 2010, it was built on three pillars:

1. Collective defence
2. Crisis management
3. Cooperative security

³ Collective, *Enciclopedia Relațiilor Internaționale*, vol. 1, ISPRI Publishing, Bucharest, 2015, p.365

⁴ <https://www.defense.gov/About/Biographies/Biography-View/Article/1055835/james-mattis>

⁵ <http://www.fpri.org/contributor/frank-hoffman/>

⁶ Mattis, James; Hoffman, Frank, *Future Warfare: The Rise of Hybrid Wars*, US Naval Institute, Proceedings Magazine, vol 123/11/1, 2005.

⁷ This is an update of the *Three Block War* concept, launched by US General Charles Krulak. His concept contained only the first three dimensions.

⁸ Freier, Nathan, *Strategic Competition and Resistance in the 21st Century: Irregular, Catastrophic, Traditional, and Hybrid Challenges in Context*, LULU Press, 2014. See also <https://www.csis.org/people/nathan-freier>

⁹ www.nato.int/lisbon2010/strategic-concept-2010-eng.pdf

There were same developments, in 2014, that have added to the current Strategic Concept. This Concept was updated by consolidating the main pillar, the collective defence. Thus, at the NATO Summit in Wales, was launched *The Readiness Action Plan (RAP)*¹⁰, the engine that will change the NATO posture, given the background of threats and challenges coming from the East and South. In 2016, at the Warsaw Summit, Allies had decided to deep and to development the posture of deterrence and collective defence. At the operational level, this means the comprehensive implementation of RAP.

The permanent update of the additional elements of the Strategic Concept was necessary due to maintaining and deepening the threats and challenges arising:

- From South: the deteriorating security in the Middle East and Africa; migration of large-scale terrorist attacks in NATO countries and beyond;
- From East: the situation of Ukraine.

The purpose of the Strategic Concept update takes into consideration the increase of the military transparency and predictability in order to avoid unfounded reactions and reduce military tensions. *NATO's strengthened deterrence and defence posture will focus on area such as conventional forces, forward presence, joint air power and maritime forces, as well as cyber defence, civil preparedness and countering hybrid threats, including in cooperation with the European Union*¹¹.

Among the ways to implement the decision adopted at the Warsaw NATO Summit is the transposing on the field of two comprehensive concepts associated with the fighting against the hybrid warfare: *Enhanced forward presence* and *Tailored forward presence*¹².

Through the transparency of the organization and ensuring a multinational system, both concepts are defensive in nature and in line with international commitments. The comprehensive character of these concepts results from the principle of *all for one and one for all*¹³. At NATO level, it defines the unitary strategy in action; an attack of an Ally represents an attack against all Allies.

All these changes prepare the way for launching the debate in formulating and adopting a new strategic concept of the Alliance.

Enhanced forward presence¹⁴. Since 2017, the concept of *Enhanced forward presence* will be implemented through NATO multinational forces led by nation's framework and other allied forces that contribute voluntarily and rotating.

Thus, Canada, Germany, Britain and the United States are framework nations multinational presence in the three Baltic states - Latvia, Lithuania, Estonia - as well as in Poland.

The four battalions will operate under NATO command. States where they will be held will provide the logistics and the necessary infrastructure.

Other allies have confirmed contributions to these forces, voluntarily and rotating over the coming years are: Albania, Italy, Poland, Slovenia and Spain will contribute to the Latvian battalion; Belgium, Croatia, France, Luxembourg, the Netherlands and Norway will contribute to the battalion in Lithuania; Denmark and France will contribute to the Estonia, while Romania and the UK will join the battalion in Poland¹⁵.

¹⁰ www.nato.int/cps/en/natohq/topics_119353.htm

¹¹ www.nato.int

¹² *Allies are implementing the 2016 Warsaw Summit decisions to establish NATO's forward presence in Estonia, Latvia, Lithuania and Poland and to develop a tailored forward presence in the Black Sea region.* Vezi și www.nato.int, accessed at 27.02.2017, and http://www.nato.int/cps/en/natohq/opinions_136581.htm, accessed at 27.02.2017.

¹³ http://www.nato.int/cps/en/natohq/topics_136388.htm, accessed at 14.02.2017

¹⁴ http://www.nato.int/cps/en/natohq/topics_136388.htm, accessed at 28.02.2017

¹⁵ http://www.nato.int/cps/en/natohq/topics_136388.htm, accessed at 28.02.2017

Tailored forward presence¹⁶. The package of measures on land, at sea and on air – *Tailored forward presence* – will be implemented in the Black Sea region following the decisions taken at the Warsaw NATO Summit in 2016, it aims to enhance interoperability, responsiveness and knowledge of situation in the area.

Terrestrial action it will be provide through subordinate NATO Multinational Brigade Headquarters Multinational Division Southeast headquartered in Romania / Bucharest. In addition, the Allies act to implement the air and sea dimensions according to decisions adopted at the NATO Meeting of Defence minister's (15-16 February 2017)¹⁷.

Perspectives

The application of these comprehensive concepts on the ground, together with all decisions aimed the update of the Strategic Concept 2010 represent the most profound strength on the line of collective defence of NATO. The implementation of these concepts will enhanced the security of all Allies and will provide the protection of the territory, population, the airspace and maritime lanes of communication, including over Atlantic, against any type of threats¹⁸.

The principle *all for one and one for all*, which rules nowadays policies and actions of NATO, reveals an increased interdependence between *hard power*, *soft power* and *smart power* concepts.

This interdependence requires articulation of integrated approaches. Not all security threats have purely military solutions, but all have military dimensions. Moreover, the recent EU Global Strategy¹⁹ on external security policy it launched the idea of an integrated approach to conflict and crisis.

The integrated approach implies: to exist the rapidly deployable capabilities, institutional flexibility, strategic communication, to share situational information between all organizations involved on different levels, to hire civil actors in the technology field, enhancing landing civil crisis management, strengthening resilience and involvement of experts. Some of these elements and common situational analysis or sharing information between organizations working on different levels, especially the decision raises the level of ambition for the present, given the political charge of such actions.

CONCLUSIONS

Analyzing the Allied posture development starting 2016 after the Warsaw NATO Summit, leads us to define the following characteristics:

- The synchronism of actions on Southern and Eastern flanks.
- Continuity of actions based on previous concepts.
- Using a mix of capabilities and complementarity: nuclear, conventional, missile defence.
- Tailored approach.
- Predicting stability through training / coaching, counselling and support for local forces (ex. Afghanistan).
- Response to crises beyond Alliance borders.
- Supporting partners.

¹⁶ http://www.nato.int/cps/en/natohq/topics_136388.htm , accessed at 28.02.2017

¹⁷ http://www.nato.int/cps/en/natohq/news_141613.htm , accessed at 18.02.2017.

¹⁸ http://www.nato.int/cps/en/natohq/topics_136388.htm , accessed at 28.02.2017.

¹⁹ <https://europa.eu/globalstrategy/en/about-eu-global-strategy> , accessed at 20.02.2017.

– Promoting transparency and mutual trust on military forces and allied activities in accordance with international law, including the Vienna Document²⁰.

– Developing and deepening cooperation with the EU.

In the light of the developing security situation the academic dimension, represent an additional vector, which could grant the long-term orientation.

In this regard, we believe that academic debates should focus on researching the necessary elements for practitioners to strengthen their practicality. Developing and deepening academic debate can contribute to the constitution of concrete options, effective response to hybrid threats.

Given these elements, we believe that levels of research should focus on the following lines:

– Options delivering a coordinated and integrated approach between the military and civilian;

– Options to strengthen European cooperation on defence and security;

– Academic contribution to the foundation of civil-military structure for planning and leading of the EU military missions;

– Academic contribution on defence and security dimension of the EU's overall strategy;

– Academic contribution to strengthen NATO-EU cooperation, including risk analysis and the security situation based on the principle of complementarity and no duplication of initiatives;

– Academic contribution for deepening NATO-UN forces including the preparation, planning and exercises;

– Academic contribution to strengthening interoperability through further training and providing a structure in multinational exercises;

– Ensuring resilience.

– Regular planning adaptation of the posture based on lessons learned.

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SEAD: WHAT, HOW, WHO AND WITH WHAT?

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Abstract: *How to safely and effectively operate into an extremely hostile and uncertain environment remains an open question to everybody involved in defence research and development. Should we confine ourselves to science and technology? Shall we dig deeper into doctrines and war fighter experience? Can we combine the above in such a way that the deliverables will eventually fulfil all requirements? Which are these requirements? All these questions need to be answered before anyone is about to take a leap into it. Proper SEAD capabilities. What are they? Who owns such a capability? To what degree do they fulfil the main task? Is there any way of comparing them to have at least a flavour of who can do this and who can do that? These were the following questions that triggered the impulse of conducting this study. Defining a SEAD capability and finding a common denominator to be used in a comparison analysis were probably the most challenging tasks. As these had been identified and set, step by step the questions what, how, who and with what is capable of delivering proper SEAD in NATO were answered. Real/Near-real time access to information seems to be the key.*

Keywords: *SEAD, SEADX, DEAD, kinetic, non-kinetic, lethal, non-lethal, hard-kill, soft-kill.*

The essential prerequisite to successfully achieving the goal of modern military air operations is the ability to obtain and maintain a desired degree of airspace control, one of the means to accomplish this, temporarily and within a limited geographic area, being the prosecution of an extremely specialized type of operations aiming at suppressing enemy air defence, namely SEAD operations.

NATO and member states' doctrinal framework set the principles that govern the whole spectrum of military operations having this effect, to deny the adversary air defence to effectively engage your own air force. Therefore, the answer to the question *how this should be done* is to be found across the long list of military publications. What more needs to be answered is *what are the means to be employed to achieve this goal, what is composed of or how could somebody define a SEAD capability*. Literally, what should a force inventory require to effectively conduct SEAD.

In an ideal environment, operational requirements (doctrine) and technical requirements (combat limitations) are set in a tight dual interdependency, meaning that doctrine directly influence technological development, setting requirements for industry and conversely, technology evolution drives to doctrinal adaptations, altering and improving the concepts of combat employment of own forces.

Setting this as a benchmark, we assume that one of the ways to fully understanding a SEAD capability is to overview NATO doctrinal principles up to a point where, applying the method of reverse engineering, we can drag out the main operational requirements to ultimately be able to identifying which of the NATO member states possesses capabilities that correspond SEAD exigency and which are these capabilities. Although this algorithm

works well irrespective of the type of combat technology is to be analyzed, or its operational environment, the article is confined, from the very first beginning, to Air Power.

When conducted in a “*soft-kill*” manner, SEAD does not aim to physically destroy a target (surface threat, surface to air missile system), but to temporarily deny its ability to engage own aircraft. Even the presence of a SEAD means into a disputed area could trigger “*soft-kill*” effects as long as it deters the enemy threat in prosecuting own air assets. Pre-emptive launch of an anti-radiation missile (ARM) is perceived as an example of a “*soft-kill*” engagement. “*Soft-kill*” effects are, nevertheless, temporary and these types of engagements are generally conducted as a direct support to strikes against other surface targets. As a consequence, its effects degrade rapidly, each of the following strikes requiring their own SEAD support.

“*Hard-kill*” SEAD missions, alternatively known as DEAD (Destruction of Enemy Air Defences), aim to physically destroy the target (enemy SAM). If a “*hard-kill*” SEAD were effective, this close support would not be absolutely necessary for the follow-on strikes. Usually, “*hard-kill*” strikes are to be executed with precision guided munitions (PGM), GPS or Laser guided, the attack efficiency entirely depending upon the accuracy of target position data used. As a general rule, this type of attacks is to be projected against pre-planned targets, when accurate positioning data is collected, correlated, fused and made available prior to the SEAD mission, as a result of a full multi-source ISR collection cycle. However, the exploitation of complex sensor architectures such as „*Multi-Ship Ranging*” (MSR) could eventually make it possible even against targets of opportunity (TOO, TST – Time Sensitive Target), the overall mission effectiveness yet depending on the capacity to rapidly sense, collect and deliver accurate positioning data to own striker aircraft.

Pre-emptive manner (pre-emptive launch of an anti-radiation missile) of executing SEAD is generally preferred when the enemy uses tactics such as „*Scoop and Shoot*”, their SAM systems associated radars being alternatively switch-off and on for short periods of time. ARMs are launched in areas where enemy targets are assumed to be located, in order to instantly initiate self-guidance when any of nearby enemy radars becomes active. This TTP (Techniques, Tactics and Procedures) is used when lacking of accurate and updated positioning data or there is unconfirmed information about other potential threats within an area.

The reactive manner is to be used whenever SAM systems associated radars are active, especially when enemy counter-air systems are engaging supported force package.

Suppression of enemy air defences aims at obtaining a desired degree of airspace control, the main goal of autonomous SEAD, or to directly support/protect a force package, known as Support SEAD.

These two types of SEAD overlap, their independent objectives adding up one to the each other in a complementary fashion. The first approach is generally limited to striking pre-planned targets having operational to strategic value (HVA – High Value Assets). An easy way to conduct this type of SEAD is to use cruise missiles (ex: TLAM – Tomahawk Land Attack Missile). Once enemy strategic air defence network is disabled, SEAD operations will progressively be re-directed to tactical SAMs, The engagement of this type of targets tends to be extremely difficult as they are more agile, mobile and used in a very flexible manner, their position and concept of employment being way more difficult to be anticipated. This requires that SEAD aircraft, autonomously or collaboratively, should be capable of real-time detecting and locating their targets. To do that, on-board avionics must be supplemented with special suites for detecting, identifying and locating radar emissions (DF – direction finding, LOB – line of bearing) way more sensible than usual radar & missile warning receivers (RWR, MWR). Moreover, in such a scenario, one of SEAD primary objectives may be to stimulate

enemy radars to switch on, to be afterwards hit and suppressed, paving a clear way to the target for the main striking package.

Support SEAD operations aim at providing direct protection to a striking package, to ensure its survival. To accomplish this task, SEAD assets usually fight along with escort fighters and in conjunction with airborne survival kits (RWR, MWR, Chaff, Flares) embedded into strike aircraft. In such a scenario, enemy integrated air defense system (IADS) is stimulated by the SEAD package (preferable) or even by the striking package. Each striking package will be having its own dedicated SEAD means (Escort) provided close protection. If SEAD is conducted in a “*soft-kill*” manner, every successive striking package will have own dedicated SEAD protection.

Should radar and SAM sites be collocated or not (SEAD specialized equipment detects and locates radar sites), it is a prerequisite that they are rapidly and accurately positioned on the map. The requirements for accuracy are requested by the weapon systems to be used for target prosecution. PGM usage requires very high accuracy to be effective. Should this degree of accuracy not be provided they will become nothing more than a “dumb bomb”.

Nowadays, due to the advanced technology embedded into new GBAD systems, their increasing mobility and flexibility in operation, and last but not least, due to more and more complex and innovative TTPs used, successful SEAD requires very high precision data, complemented by an enhanced capacity to react fast and properly when threat detected. All of these requirements exceed the capacity of a single aircraft to operate individually, asking thus for complex sensor architectures working together as an integrated system to making necessary data opportunely available to effectors. One of many envisaged solutions is to applying a multi-platform multi-sensor approach („*multi-ship ranging*” or „*multi-platform geo-location*”).

Passive weapon systems such as anti-radiation missiles not always reach the expected efficiency due to adversary TTPs, design of their surveillance system (networked, flexible nodes), radar blinking (alternative switch on and off), utilization of passive surveillance systems, congested electromagnetic environment, and so on. Moreover, in such a situation, mission failure rate and the potentiality for collateral damages are very high, ARM missing the intended target and striking no-hit objectives (civilian). This is why ARM efficiency was always on top of any research & development approach to SEAD.

Stealth or Low Observable bombers are not entirely dependant on dedicated SEAD support to perform their missions, as the survivability rate is given by their non-detection characteristic. However, current technology enables stealth or low observable characteristics in specific frequency ranges only, and not across the entire electromagnetic spectrum. Modern IADS use a large variety of sensors operating on diverse wave length, actively and passively, making them more and more capable of detecting low observable flying threats at least. Concurrently, it is very difficult to design low observable large body aircraft and helicopters, therefore almost impossible to make them entirely “invisible” for enemy radars. This is why these assets strongly require SEAD protection when operating in a hostile environment.

Most of the modern aircraft are equipped with self-protection kits (electronic countermeasures) capable of ensuring their survivability in a combat scenario. Even though these airborne equipments work properly, SAMs engagement are still able at least to deny own aircraft capacity to accomplish their tasks within the planned/allocated timeframe (TOT – Time on Target), delaying the attack, making them stay longer in a threatening area, therefore progressively increasing the odds of being downed.

Thus, obtaining and maintaining a desired degree of airspace control, at least temporarily and confined to a limited battle-space, tends to be a prerequisite for effective air operations, and SEAD is, among others, one of the means to achieve it.

Analyzing all the above considerations, it is assessed that the ability of a complex of combat systems (capability) to effectively perform SEAD is overwhelmingly given by a comprehensive set of requirements, complementary one to the other, organized in four groups as follows:

- Sensors requirements.
- Platform requirements.
- Net-centric requirements („*system of systems*” approach).
- Weaponry requirements.

ESM¹ sensors requirements:

- Expanded frequency bands.
- Accurate geo-positioning, at least to cueing other sensors (EO/IR – electro-optical/infrared, SAR – Synthetic Aperture Radar).
- Inter-platform and/or intra-platform net-centric integration with other sensors.
- Net-centric connectivity between multi-sensor platforms (reconnaissance) and strikers (effectors).

Platforms requirements:

- High manoeuvrability of SEAD/DEAD specialized platforms.
- Increased self-protection of SEAD/DEAD specialized platforms.
- „*Stand-Off*”² electronic warfare (ES/EA³) direct protection of strike packages (SOJ – Stand off Jamming).
- RPAS utilisation in SEAD/DEAD roles (UCAV-Unmanned Combat Air Vehicle).
- Stealth characteristics.
- IADS stimulation with special systems (decoys, DRFM⁴).
- ES, SIGINT⁵ direct support to SEAD, to include net-centric data-links capable or near real-time/real-time threat warning data transmissions
- modular avionics and open airborne architectures to accommodate SEAD specialized equipment

Net-centric requirements:

- Net-centric connectivity in closed networks (TTNT, NCCT, CESMO) and/or open networks (Link 16, 22) to ensure immediate threat warning data flow, with a special emphasis on targets of opportunity (TOO) and time sensitive targets (TST).

Weaponry requirements:

- Advanced anti-radiation missiles, like AARGM (Advanced Anti-Radiation Guided Missile), one of the few anti-radiation missiles capable to effectively cope with modern GBAD threat.
- Complementary guidance to anti-radiation seekers (multi-mode seekers) on specialized weapons, doubled by a increased data processing embedded capacity.
- PGM (Precision Guided Munitions) utilization in SEAD roles, with a greater emphasis on stand-off weaponry (JSOW - Joint Stand-Off Weapons).
- SEAD weapons designed to be accommodated by stealth aircraft.

1 ESM – Electronic Support Measures

2 Stand off – out of SAMs killing range

3 ES – Electronic Surveillance; EA – Electronic Attack

4 DRFM – Digital Radio Frequency Memory

5 SIGINT - Signals Intelligence

- Expendable devices used in SEAD roles for stimulation, simulation, deception, saturation, jamming and/or destroying IADS (ex. ADM-160 A/B MALD, ADM-160C MALD-J, MALD-V, Israeli HAROP).

Thus, amalgamating the above requirements, a SEAD capability could be defined as a complex of means and procedures which, in specific combinations, is capable of securing the penetration of a striking package in a contested hostile environment, in full compliance with current technological developments. In any combination, this list of requirements sets a template to be used as an indicating factor on how much an Air Force inventory is or may be assumed as an effective instrument to provide SEAD effects against pier-to-pier adversaries.

In their continuous effort to standardize and increase interoperability, North-Atlantic Alliance already set critical requirements templates for a standard airborne SEAD capability. It falls under Protect/Defence – Electromagnetic Threats and has the following profile (capability statement)⁶:

- Common description: capable of engaging multiple ground-based threat emitters by Anti Radiation Missiles (ARM) or other destructive weapons.

- Common principal statements:

- o Capable of detecting, locating, and identifying in dense electromagnetic (EM) environment, airborne and surface electromagnetic emissions (such as radar, laser, infrared, ultraviolet, etc.) and react automatically with appropriate self-protection measures.

- o Capable of manual Low Level Terrain/Terrain Avoidance.

- o Capable of quickly and accurately transmitting threat information to an ARM or PGM.

Additionally, NATO also set the statement for an advanced SEAD capability (SEADX), defined as capable of searching, detecting, precisely locating multiple ground-based threat emitters with HTS/ELS type systems and engaging within 30 seconds of first detection.

We can conclude that, due to the existing technological gap between US and European NATO countries in terms of SEAD capabilities, many European countries will likely launch major new technology acquisition programs, taking a qualitative leap to compensate current quality-quantity cleavage between the two sides of Atlantic Ocean. Beside the long-awaited multi-purpose F-35 Lightning aircraft, there will probably be made important progresses in the development of remotely and/or self-piloted SEAD capabilities, paralleling deeper exploration of other emerging areas such as directed energy and electronic attack using cyber techniques.

By then, the only real SEAD providers in NATO are and will be US, Italy and Germany, a reality confirmed, one more time, by the air force resource committed to the most recent NATO air heavy operation, operation Unified Protector. Excepting Germany, a non-participating nation to this operation, Italy took over a quarter from those around 2000 SEAD sorties conducted against Libyan air defence, the rest of the burden being attributed to US.

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THE IMPACT OF TAX EVASION AND TAX FRAUD ON THE PUBLIC EXPENSES ALLOCATED TO THE DEFENCE OF ROMANIA

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Abstract: *Fighting the tax evasion and the tax fraud is one of the strategic priorities of developed countries worldwide. It is well known, researched and documented by Romanian and foreign experts in the field of tax evasion and tax fraud that these two harmful phenomena directly affect government expenses. However, when it comes to the budgetary expenditure incurred for national defence, the research studies are limited in volume and availability. Thus, this paper aims to analyze the impact that the two phenomena have had on the state budget allocated to the defence of Romania, further to the country's accession to the North Atlantic Treaty Organization ("NATO") in 2004. The analysis behind the paper was based on public information about the state budget allocated to national defence and expenses made (available NATO reports), as well as data on tax evasion and tax fraud issued by the competent institutions of Romania (e.g.: National Institute for Statistics, the Tax Council).*

Keywords: *tax evasion, national defence budget, public expenses.*

Introduction

In a fast growing international market, where international transactions can be made remotely, one of the biggest challenges of the tax authorities worldwide is to monitor such transactions and ensure that the correct taxable treatment has been applied. If the 20th century can be considered a century of banking and financial secrecy, the financial crisis that marked the beginning of the 21st century sparked the interest of the international bodies and government representatives in increasing tax revenues by fighting the tax evasion.

Tax evasion and tax fraud have an impact on state budgets and government spending both in developed countries and in developing countries. According to the Organization for Economic Cooperation and Development ("OECD") (OECD, 2015), the way in which these two phenomena affect public finances depends both on the degree of economic development of the state, tax and social security rates, share of each type of tax in total tax revenues, as well as on the perception that taxpayers have on the tax system and public authorities in general, the level of education of taxpayers, bureaucracy, and others.

Thus, several Romanian authors (Albu, 2001 Andrei, Stefanescu and Oancea, 2011; Manole, 2014; Vintilă, Armeanu, Filipescu, Moscalu and Lazarus, 2012 and others) and international ones (Ahumada, 2008; Cagan, 1958; Davoodi and Tanzi, 2000; French, Balaita and Ticsa, 1999; Mehrara and Farahani, 2016; Pechman, 1986; Schneider, 2002; Schneider and Enste, 2000; Schneider, Raczowski and Mroz, 2015 and others) have analyzed the phenomena of tax evasion and tax fraud from different angles and the impact they have on the economic and social development, including the budgets of states and government spending. However, it is worth mentioning that these authors have analyzed only at high level the impact these phenomena have on the budget allocated to the defence and government spending needed to ensure procurement of military equipment.

With the accession of Romania to NATO, our country has assumed the allocation of a minimum 2% of the gross domestic product ("GDP") for both current expenditures of the Ministry of National Defence and developing defence capabilities. The share of expenditures for purchase of military equipment in the defence budget has also been subject to a NATO guideline, of at least 20% of the annual defence budget. In light of the budgetary constraints that all NATO member states faced during the economic downturn, most have decided not to respect its commitment to allocate 2% of GDP on defence. Promises and projections available show that Romania wants to start respecting the commitments made when joining NATO and allocate 2% of GDP over the period 2017-2026, as stated in the Program regarding the transformation, the development and the equipment of the Romanian Army until 2027 and beyond, approved by the Supreme Council for National Defence in June 2015 (the "Program"). In 2017, Romania has allocated 2% of GDP, thus respecting both the Program and the commitment made to NATO.

Romania's tax legislation, a legislation strongly influenced by the French model but slightly outdated in terms of international developments, incorporate both terms (i.e. tax evasion and tax fraud) in the same general principle called "tax evasion". Thus, in this paper, all references to tax evasion shall also include the tax fraud concept.

Evaluation of the tax evasion in Romania during the period 2004 – 2015

According to the scientific literature, there are three different methods used to analyze the level of tax evasion in the GDP:

- The MIMIC method (multiple indicators - multiple causes), developed by Schneider;
- The monetary method developed by Cagan (1958) and subsequently improved by Ahumada (2008);
- The national accounts method, used by the National Institute for Statistics (hereinafter also referred to as "NIS").

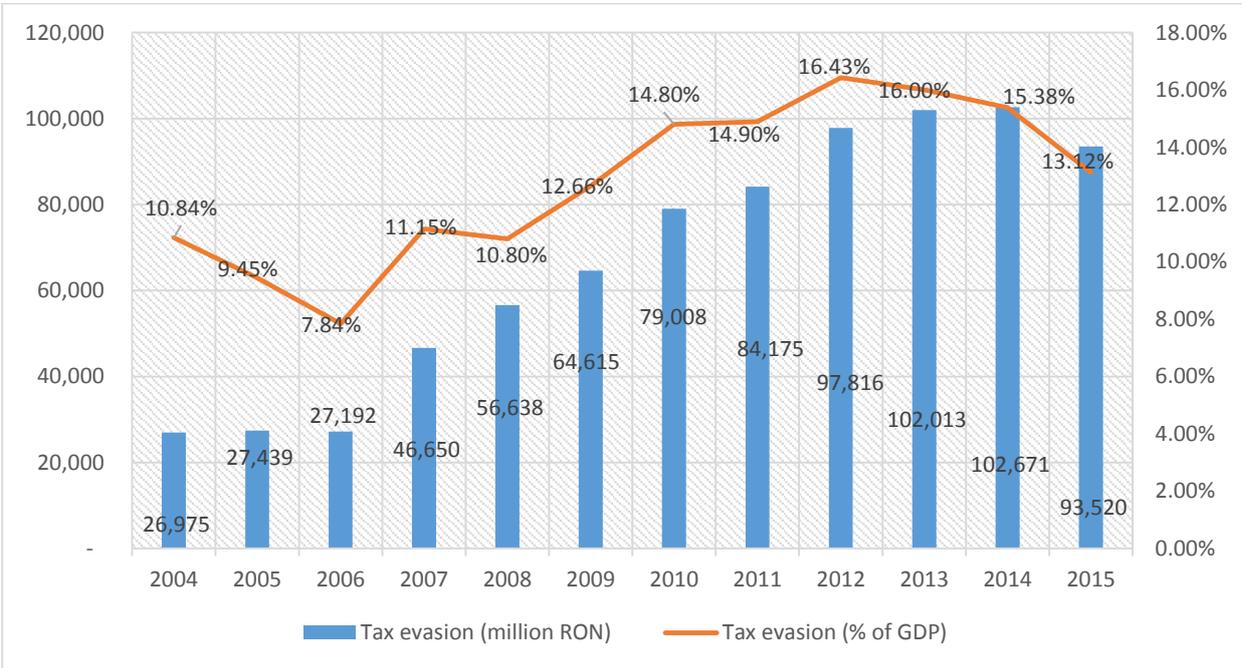
According to Manole (Manole, 2014), the MIMIC method assumes that the underground economy is affecting production, labour market and monetary market. Schneider (Schneider, 2000) defines the informal economy as a latent variable that cannot be directly observed. The econometric model also includes measured variables, causal variables (ex.: fiscal freedom index, business freedom index and economic freedom index - calculated by the Heritage Foundation, the share of direct taxes in total taxes, the share of indirect taxes in total taxes, the share of government expenditures in the GDP, GDP per capita, inflation rate, etc.), economic and social indicators (ex.: GDP per capita, index of growth of GDP per capita, employment rate, workforce increase index).

The monetary method, as was developed by Cagan (Cagan, 1958) and subsequently improved by French, Balaita and Ticsa (French, Balaita and Ticsa, 1999) and Ahumada (Ahumada, 2008), is using variables such as the amount of cash outside the banking system, total government expenditure, short-term interest rates, inflation rates computed using the consumer price index against its growth rate over the previous year, taxes on products, and others, to identify the level of the underground economy (by assessing changes in the amount of money outside the banking system). According to calculations made, this model offers the most pessimistic figure of the underground economy.

For this paper, we have used the national accounts model and determined the level of tax evasion based on data published annually by the Fiscal Council in the annual reports on the macroeconomic and budgetary evolution and outlook and reported to them by the National Institute for Statistics. The evaluation of the tax evasion has been made by dividing the economy into two sectors: the formal and informal sectors. In the formal sector, the under-

reporting of the labour force and the tax evasion performed by non-financial entities having an impact in under-declaring the gross added value was envisaged. Regarding the informal sector, the estimation of the tax evasion in the gray economy was made for all activities undertaken by unregistered traders.

It should be noted that, in the formal sector, the available figures do not take into account the tax evasion generated by over-reporting of deductible expenses and under-reporting of taxable income when computing the corporate income tax, the transfer of profits to other jurisdictions and local taxes on goods and property owned. Moreover, this model does not include the income tax due by tax residents of Romania on capital invested abroad (e.g. rent for property held abroad, investment income earned abroad, royalties obtained abroad). However, excluding hybrid instruments of transfer of profits to other jurisdictions and sporadic failures to declare the income tax, the national accounts method can draw an estimate on the level of tax evasion in Romania. Due to lack of official statistics, the figures for 2014 and 2015 do not include the excise tax evasion recorded.



*Figure 1: Evolution of tax evasion in real terms and as a percentage of GDP
Source: Own estimations based on information provided by the Fiscal Council and the NIS*

As shown in Figure 1, during the period 2004-2015, the tax evasion in real terms has experienced a steady growth, with the exception of 2006 (the introduction of the flat income tax rate) and 2015 (due to the tax authorities' efforts to increase the collection of VAT). In terms of percentage of GDP, the tax evasion has experienced a steady growth during the period 2008-2012, a period that was strongly influenced by the global economic crisis.

In terms of fiscal policy, Romania has a relatively low share of tax revenues in the budgetary income (a little over 30%), reason for which in the period 2004-2014, reducing tax evasion was a strategy just for public discussions. Since 2014, due to the pressure of the public opinion and of the European institutions, improvements have been observed both at a strategic level (setting a budgetary strategy for 2014-2016 focused on reducing tax evasion) and operational level (plans to educate taxpayers, programs to improve voluntary compliance, tightening of voluntary registration for VAT purposes, reducing social security contributions by 5%, and others).

A feature of Romania's tax evasion is the high share of tax revenues from excess VAT (receivable VAT - refunded VAT) and mandatory social contributions. These two tax liabilities are mostly used in the Romanian tax evasion, in terms of VAT having reached up to 60% of the total tax evasion in the period under review. Following a reduction in the VAT rate of certain categories of products (e.g. bakery, groceries) and the tightening controls performed by the tax authorities, the collection rate of VAT increased from 51% in 2013 to 72% in 2015, approaching the level of collection of the social security contributions amounting to 76% in 2015.

Even though there is no current public information about the tax evasion recorded in 2016, forecasts are rather optimistic, the tax authorities having continued the strategies to increase tax revenue collection by reducing the overall taxation (e.g. reduced VAT rate and dividend tax rate), broadening the tax base (e.g. change in the rules of establishing the tax residency, updating the definitions of investment income) and simplifying the tax system (e.g. introducing the possibility to pay taxes by using the credit card, multiplying the number of statements that can be submitted online).

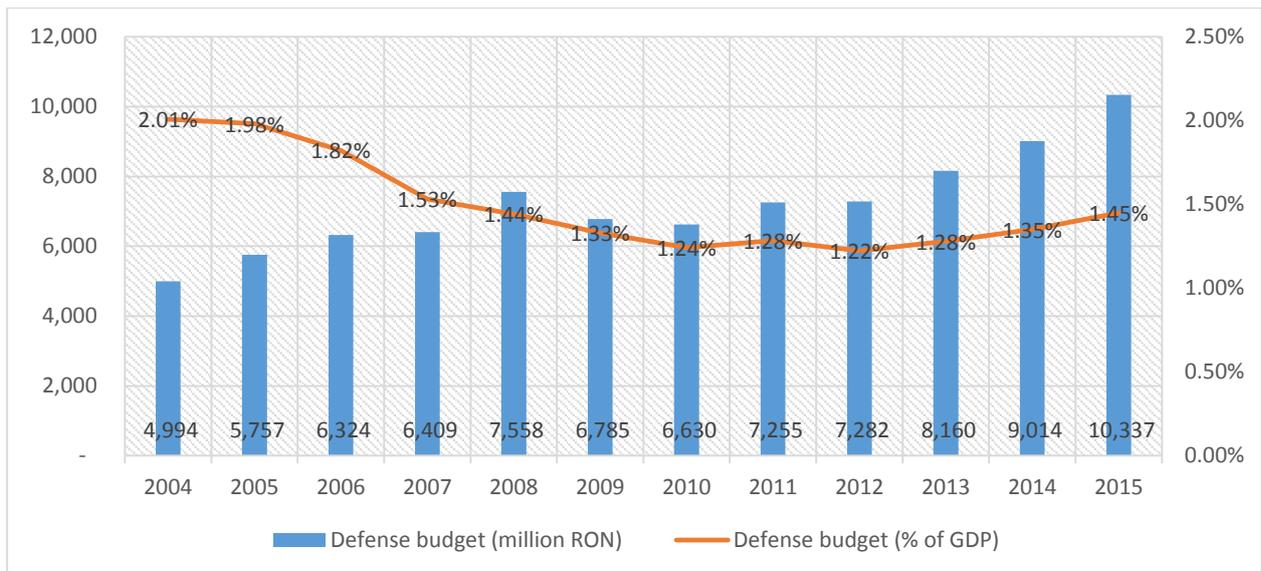
Unfortunately, the beginning of 2017 brought a big setback in terms of tax evasion by eliminating the thresholds applicable for the computation of mandatory social security contributions and by introducing the compulsory micro-enterprise taxation system for companies with turnover of less than 500,000 EUR. Other possible modifications which may have a negative effect on tax evasion are: the introduction of progressive income tax rates, the elimination of the assessment of the intent and ability to conduct business involving VAT and the obligation to declare the personal assets.

The defence budget and expenses incurred with military equipment procurement in the period 2004-2015

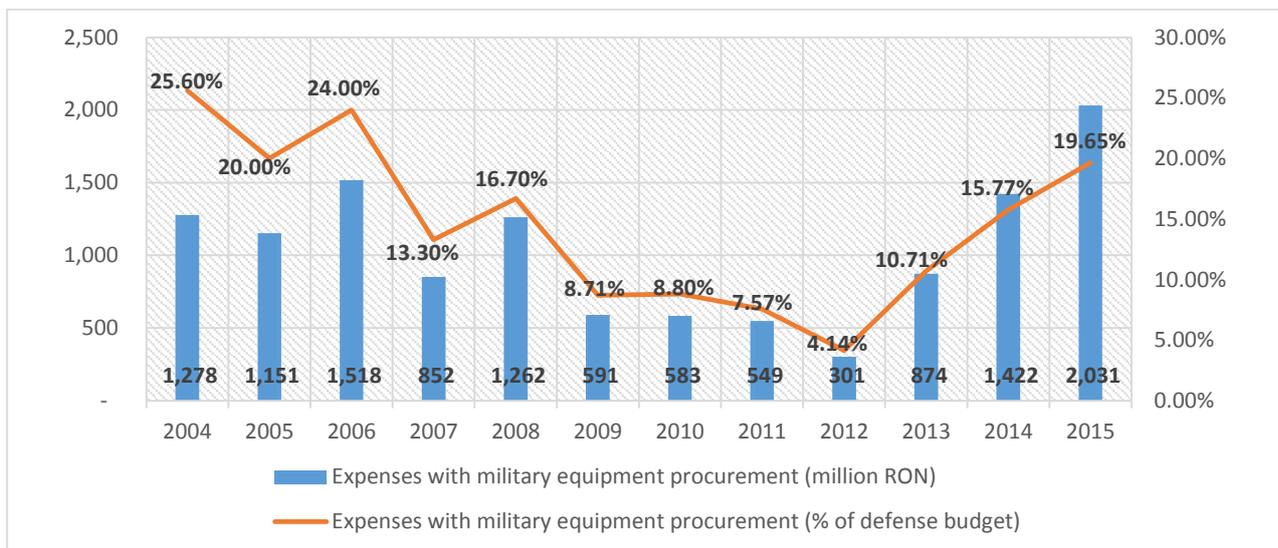
Annually, NATO collects information on defence budget allocations made by partner countries and publishes the findings in its annual reports. At the same time, NATO collects information on the various types of expenses incurred from the defence budget, e.g. military procurement, personnel, infrastructure and other expenses. NATO's recommendation is that each NATO member country should allocate at least 2% of the GDP to defence and the Ministry of Defence of each country should use at least 20% of the budget for the purchase of military equipment.

In addition to the information received from the governments of the member states, NATO also uses economic and demographic information received from the Directorate General for Economy and Finance of the European Commission and the OECD. Thus, differences may occur between official statistics published by the member countries and the information published by NATO.

This paper will use the information published in the NATO's annual reports. Based on this information, the budget allocated to the defence of Romania and the expenses with the purchase of military equipment during 2004-2015 are shown in Figures 2 and 3.



*Figure 2 – Defence budget, in real terms and in percentage of GDP
Source: Own computation based on information provided by NATO*



*Figure 3 – Expenses with military equipment procurement in real terms and as a percentage of the defence budget
Source: Own calculations based on information provided by NATO*

According to our calculations, Romania has fulfilled its commitments to NATO in terms of budget allocation only in the first year of joining the North Atlantic Alliance, later deciding to prioritize other sectors of the public apparatus. Moreover, even if Romania has decided to participate in various military operations under NATO command (e.g. Multi-National Force - Iraq, Combined Joint Task Force - Operation Inherent Resolve, International Security Assistance Force) the targeted percentage of expenses with the procurement of military equipment in the defence budget was only reached in the first 3 years of membership.

A massive share in the defence spending represents personnel costs, varying between 50.60% and 84.00% in the period under review.

Acceptance by Romania of NATO guidelines regarding the defence budget and expenditure with the purchase of military equipment

As a further step in our study, we analyzed the situation in which Romania would have assumed the guidelines of NATO in budget allocation for defence and purchases of military equipment to identify the need to reduce tax evasion to cover the budget deficit created by such a scenario.

Based on real GDP, we calculated the value of the committed defence budget for the period 2004-2015 (2% of GDP) and the difference between the defence budget and the committed defence budget. The values identified are represented in Figure 4.

Subsequently, estimating the committed defence budget and assuming that other types of expenses identified by NATO in the defence budget (cost of personnel, infrastructure and other costs) would remain unchanged, we calculated the share of expenditure on military equipment in total committed budget during the period 2004-2015. The results are represented in Figure 5.

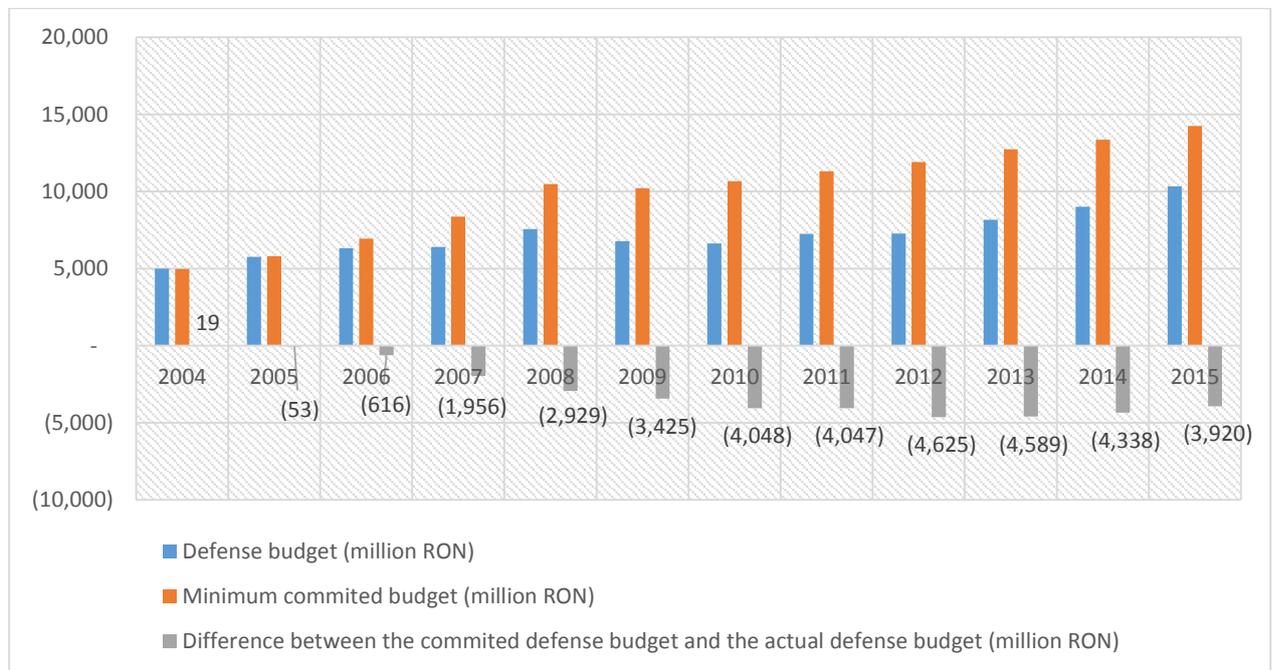


Figure 4 - The difference between the defence budget and the committed defence budget in real terms

Source: Own assessment based on information provided by NATO

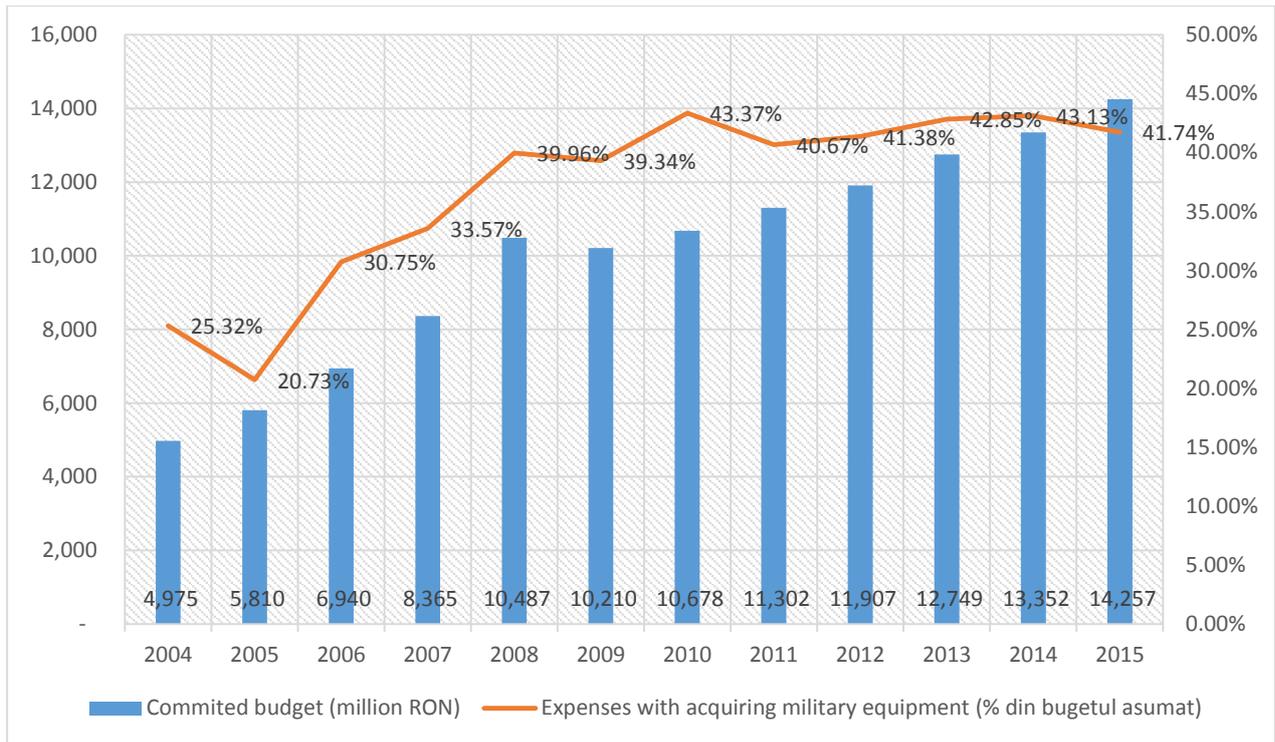


Figure 5 - Theoretical committed military equipment expenses in the defence budget in percentage of the committed defence budget

Source: Own calculations based on information provided by NATO

Based on the assumption that other costs would remain unchanged, the percentage of purchases of military equipment would constantly exceed the target of 20% of the committed budget assumed by Romania at its accession to NATO. Surely, the purchase of military equipment would likely lead to increased staff and infrastructure costs but due to the high difference between the computed share and the targeted percentage, it is likely that the increases in staff and infrastructure can be incorporated into a budgetary structure which will ensure the commitments undertaken when joining the North Atlantic Treaty.

Concluding that, should a budget allocation of 2% of the GDP have occurred during 2004-2015 for defence purposes, NATO guidelines would likely have been met, all that remains is to determine possible sources of financing the budget deficit caused by the increase in the defence budget. As such, we estimated the necessary reduction in tax evasion in order to combat the effect of increasing the budget. The results are shown in Figure 6.

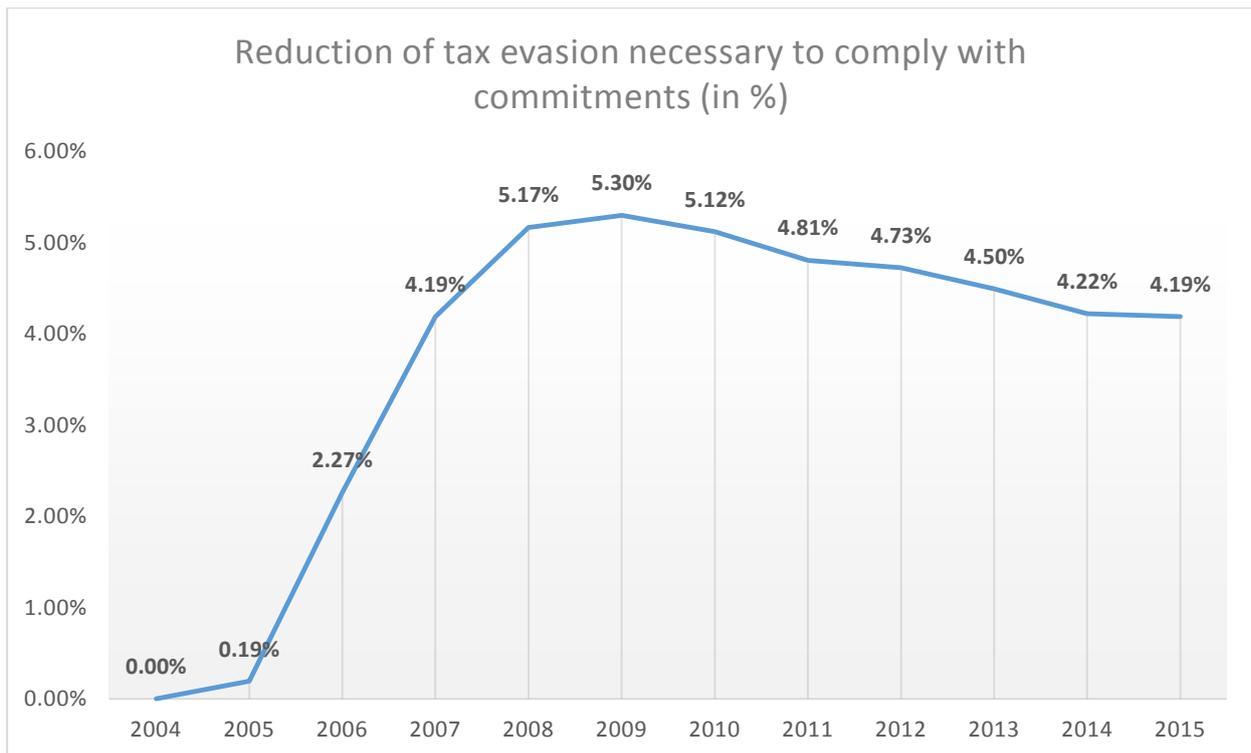


Figure 6 – Reduction of tax evasion needed to comply with the commitments in percentage
Source: Own estimates based on information provided by NATO, Fiscal Council and NIS

Given the purpose of analysis, the results are fascinating, in the analyzed period being necessary to reduce tax evasion with an average of 3.72% (directly allocated to the defence budget) for Romania to be able to meet its financial commitments towards NATO.

CONCLUSIONS

According to the Fiscal Council, if Romania wouldn't have known the phenomena of tax evasion and tax fraud, the annual budget revenues would be around the average identified for Member States of the European Union (as a percentage of GDP). As such, given that these illicit practices reduce the chances of Romania to finance government spending, the entire public sector is affected. Even if the decision to allocate the state budget towards various areas of government spending depends on strategic, social, economic and geopolitical interests of every government, the possibility of Romania to allocate 2% of GDP to the defence of the country would considerably increase in case of decrease of tax evasion.

The study shows that if the Romanian Government had a strategic interest to allocate 2% of GDP to the defence of the country, the allocation of 20% of this budget to the purchase of military equipment would have been possible. Moreover, in order to finance the budget deficit, the authorities would have had to reduce tax evasion in average by 3.72% over the period analyzed. The results are even more fascinating as the method used to assess the tax evasion was the method that reflects in the most optimistic way the tax evasion in Romania. Given the very interesting results, the study should be adapted to modern evaluation methods of the tax evasion (MIMIC or monetary methods).

At the same time, combating tax evasion must be a priority for all policies and development strategies of Romania. Several specialists, including Eugen Rădulescu, former Director of the National Bank of Romania and Ionuț Dumitru, chairman of the Fiscal Council, warned that the high level of tax evasion in Romania is a threat to national security and endangers the future of Romania.

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THE PHYSIOGNOMY OF MILITARY ACTIONS AND INTELLIGENCE PREPARATION OF OPERATIONAL ENVIRONMENT IN THE CONTEXT OF HYBRID WARFARE

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Abstract: *The physiognomies of military actions that may be conducted during hybrid warfare require a thorough intelligence preparation of the operational environment, especially due to technological advance and human society evolution in the 21st century. That is why the physiognomies do not analyze the enemy just on military power but also economy, socially, media, ethnical mixture, regional interests.*

The intelligence preparation of the operational environment for the hybrid warfare is basically the same as for classic operations, but planimetric details (such as cities) play a larger role. And when we talk about a city we talk about human population, this is the reason why we must focus on these aspects. Due to this the analysis of the effects over operations becomes far more complex and requires a far more evolved database, data that must be analyzed by specialized personnel.

Keywords: *hybrid warfare, military actions, intelligence preparation of the operational environment.*

Hybrid warfare - physiognomy

The control over resources was, is and will be the real goal for every single war. Although at first glance this objective is not to the fore, a more detailed analysis of resources take their rightful place in the grounds generate conflict. Any conflict involves consumption of resources, which in one form or another must be recovered. The media are thrown various reasons like stop genocide in Kosovo against ethnic Muslims but do not forget that Kosovo has provided no. 3 world ferrous metal excluding gold and silver. Endpoint should not be confused with intermediate targets or generating conflicts furniture. If not identified in the beginning, the ultimate goal is shown by the damage they pay for war by the defeated states. Take the example of the Second World War when the Romania paid to USSR agricultural products or the fight that led to a fresh US and USSR occupied Germany to "arrest German specialists" were spearheaded in the developing military technology. We can illustrate Iraq's conflict that opened a river of oil flowing to the US. Motivations such ethnic conflicts, removing dictators, imposing democracy or communism always pale before resources which are a prerequisite for any major conflict. Major Powers are avoiding controlling resources

openly. They will use all sorts of intermediaries not to run out of arguments before the international community and public opinion.

Actors are built into a real puzzle and are placed like a checkerboard by the great powers. They are formed by local people which is the goal of all parties involved in the conflict, the parts involved which can be even 3 (with an international force interposed between belligerents), the legitimate government with the whole security system, international organizations and interest groups that generate different power poles the means available.

The local population is the harshest. This is handled by everybody and is really only suffering from the conflict. Traditional living space is affected and here we illustrate the massive migrations of populations taking place as we speak (Middle East to Europe). The local population is widely used for legitimate the conflict. A good reason to generate a war is the crime against humanity and a good reason to end the conflict are free elections that give a legitimate government. The local population suffers from massacres and then chooses the government suggested as a result of widespread manipulation. If the conflict degenerate into civil war all local people suffer the most.

Parties to the conflict are usually composed of armed forces. If these forces actually entered the conflict means that it run from hybrid to the classic war. Usually armed forces will be used for demonstrations of force by the aggressing state and for counter-current problems and internal by the attacked state.

The legitimate government of the aggressor state implements and provides all the resources needed to achieve the strategic objective. Attacked state's legitimate government counteracts actions with its entire security system. This point must be emphasized that the aggressor state controls power poles in the assaulted state structure. These actions are prepared long before the start of the conflict and aims to dismantle/erosion inside abused state power. These actions cover espionage and counterespionage, and are executed by specialized structures.

International organizations have proven to be increasingly important in last decades. UN approves or disapproves wars, international tribunals condemned war criminals, the International Red Cross and Red Crescent is present wherever there is a major conflict. In the hybrid war they become key players. They dictate the terms of reference of any conflict in front of the public opinion. To pass the dam made by these organizations obey their requirements or control them by other means. The rule is a combination of the two methods.

Local or regional interest groups are the real parties in conflict. They actually generate conflict and are the first to obtain the advantages of all kinds. The objectives of these groups are clearly articulated their interests all over directing the conflict. If the conflict degenerates they are the first to put up safely exploiting every opportunity.

The tactics used in the hybrid war are various. Just keep limiting by the aggressor inability to generate a new pressure. Disputes can enlarge ethnic, religious, territorial, resource etc. Intelligence and counterintelligence are very active. International pressure can be used directly or through intermediaries. Actors can create economic crisis in certain sectors that generate social disorder. Everything is directed to discredit the legitimate government of the target state. Once the rule is broken there are new leaders who are supported to occupy key positions in the new government power system. A great importance is the media. It is the trumpet that form and deform views and perceptions, is the main vehicle handling. Regular armed forces are used to demonstrations of force and exceptionally to solve ad hoc tasks. Military invasion conflict goes beyond the scope of hybrid. However, regular forces were used by the Russian Federation in Ukraine after the little green men. With all preconditions met, they sent regular forces to occupy the main elements of infrastructure force.

Stages of waging war are similar to the classic hybrid: preparing, acting and strengthening.

Preparation begins with identifying the objective and ends when aggressor state is capable needed to generate those events to reach the goal. At this stage, all plans are built, simulations finished, targets identified and chosen the directions that lead to the goals faster. The most vulnerable elements are studied and developed in action plans. It means choosing optimal resources and passed to effective preparation. This training should not be seen as a starting point for the whole process. Analyzing the history of the two countries will find points of divergence on the same theme. Everything is a repeat of history. When all plans are drawn up and checked, all resources are allocated and all the remedies are operative is to proceed to action stage.

Hybrid warfare action phase is characterized by aggression, deception and manipulation. Events are created to dislodge critical mass of local population in the desired direction, discredit legitimate government and legitimize another power. Events generated can attack all dimensions of society: economic, social, political, cultural, ethnic even legal. Effects direct public opinion by discrediting local government. It's all very skilfully directed and the aggressor state will never display in public objectives achieved. There will always be used intermediaries, local leaders who are fair to the aggressor state. It will be widely used media to direct international public opinion towards the desired direction. Will be avoided flagrant violation of international treaties but their boundaries will be taken to the extreme. This stage can generate unpredicted effects and even twists. They will not complete advantage aggressor state civil wars but hardly eliminated. This stage ends with obtaining legitimacy of the new government.

Consolidation phase is those new government liquidated all power poles disloyal. After a reasonable time or even immediately, it will reveal the central motive for the conflict.

Intelligence preparation of the operational environment in the context of hybrid warfare

Intelligence gathering is essential in hybrid war. Technological development has caused major changes in this domain. But although this kind of confrontation is based on integrated action of sophisticated reconnaissance and surveillance systems, the conventional methods have evolved but the way it works is not new. For example, if we study historical referring to the invasion of Afghanistan by Soviet troops in 1979, we find that Intelligence gathering was carried out by Special Forces in cooperation with the KGB. The Soviets had formed mixed cell specialists with exceptional military training, special equipment for monitoring, intercepting and shooting. These cells were very high mobility, often moving by air, they were equipped with the latest weapons and equipment for the rapid transmission of information. The purpose of these cells was to discover important military targets and key figures, to intercept calls and capture documents, to jam communications, or to capture, murder, blackmail or corrupt high hierarchy mujahedin leaders. The existence of these cells has been denied, and if we look at the hybrid war, the concept of "little green men" overlaps well over this typology.

Technological differences between the two parties in the conflict may have a decisive role in the outcome of the hybrid confrontation. The rapid development and dispersing action in many key points of the battle space determines resizing capabilities both collection and processing. The amount of information required is huge for both combatants and the deadlines for collecting data, processing and dissemination are developing in fast sequences. Sustaining this process is necessary specialized equipment for intelligence gathering and sophisticated integrated processing and dissemination.

Generally attacking forces are well-equipped, have good procedures in place and used to maximum advantage in intelligence technology. Hybrid forces to be acted upon are lower

from this point of view, are poorly equipped with advanced integrated systems and most often are surprised and unable to protect essential information regarding their actions.

There are major differences also regarding the threat evaluation process. If the attacker is able to prepare detailed action and knows all about composition, disposition, strength, effectiveness, logistics and techniques, tactics and procedures, the attacked forces are fighting an unconventional enemy, difficult to identify and particularly hard to distinguish in relation with the civilian population in the area.

The realities of the operational environment during military actions conducted by advanced armies in Iraq and Afghanistan added a new dimension to the intelligence preparation of the operational environment. So, if during classic military actions defining and describing the battlefield took into account terrain and weather effects over operations, technology development and human society advance have complicated the battlefield analysis. Civil considerations occurred in the XX and XXI century forced the military planners to add the human dimension to the effects over operations.

If during classic military operations urban terrain would be surrounded, having in mind that later they would be conquered, nowadays this is not enough. Surrounding urban terrain does not ensure success, and the outcome of contemporary conflicts highlighted the importance of controlling not just the outside of a city, but especially the inside of a city.

Available writings regarding intelligence preparation of the battlefield emphasize that terrain and weather are two main factors that are identical for the opponents. Still, planimetric details that are set on the terrain, and obviously their control, may ensure success for the operation.

Historically speaking conflicts presumed violent confrontation of two or more actors for accomplishing objectives established at political level, confrontations did not take into account the population that existed on the battlefield. But, these coordinates have changed along with the evolution of the mankind and obviously the technological advance. These evolutions created new aspirations for people, aspirations that could be gained only through fight. This fight knew several ways of conducting, from classic military operations to guerrilla, terrorism and insurgency. The physiognomy of these actions has modified, little by little, the way that operational environment should be analyzed.

In the 20th century, and more recently, the 21st century, combinations between different means in order to obtain success have surfaced combinations that through their uniqueness made possible the hybrid warfare.

Due to the fact that devastating effects of the two World Wars are still fresh in the memory of mankind, actors that desire accomplishment of some objectives look to avoid such conflicts. One of the most used means was manipulating local population from the operating area. And aspects regarding local population must get maybe equally high importance as terrain or weather when it comes to operational planning.

In this essay we wanted to highlight the use of instruments such as PMESII and ASCOPE, instruments that ease the analysis of the operational environment in certain aspects of effects over operations. These tools focus on local communities present in the area of operations analyzing them politically, socially, ethnically, admin, social classes, social hierarchy, economy and may provide intelligence that could help to identify relevant aspects regarding the non-state actor that operates within asymmetric warfare. Intelligence obtained by using these tools during operational environment intelligence preparation process help significantly to identify the threat, establish its order of battle, as well as establishing its operating TTPs, TTPs that may provide areas that should be focused on during mission training. Also, these instruments provide operational planners with Intel on links between insurgents and local community, whom are insurgent leaders, which is their background,

whom supports the insurgents, from where are the insurgents, why the insurgents fight, how can be the insurgents convinced to give up fighting.

Some armed conflicts that are used as examples regarding hybrid warfare, conflicts such as those from Cechnya, Palestine, Syria, Israel vs Hezbollah, have emphasized the deficiencies met during operational planning, planning that did not take into account local population existent on the battle field, local population that sometimes blocked the plans and operations of the state actor, by supporting, open or covert, non-state actor.

Applying efficiently these instruments may lead to high efficiency of the targeting process, process that through the results of the operations may diminish the resources necessary to accomplish the objectives established.

Concluding, intelligence preparation of the operational environment evolved from OCOKA/OACOK that was specific to classic military actions to OACOK/PMESII/ASCOPE which is far more useful during counter-insurgency operations, but more likely during counter-insurgency operations in the context of hybrid warfare.

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9. FM 3-60 – The targeting process

THE PHYSIOGNOMY OF THE TACTICAL LEVEL LAND FORCES' OPERATIONS IN THE HYBRID WARFARE CONTEXT. CHALLENGES REGARDING INTEL SUPPORT

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Abstract: *Hybrid war is a new term which defines a new type of warfare containing all the components that a nation/ state/ community have nowadays. Even if the term is new, the concept is as old as the term of warfare. Maybe the notion of hybrid war is struggling to define the early conditions of war. In a common acceptation a war begins when belligerents start the fight for real or when the first bullet is shot. Until this event happens there are a series of events that happened before. I think that the concept is needed because of the laws adopted in the field of warfare, and especially due to the fields uncovered by those laws. If the war is almost fully covered by many regulations, the events that really trigger the war are more than exposed. I believe this is an effort to cut the deep roots of warfare and not the effects which have many receipts.*

The hybrid warfare physiognomy denotes a combination of previously known types of warfare, whether conventional, irregular, political or information. Russia changed older forms of "war-winning approaches" from the history of strategic thought, and packed them wisely under a new version: "Hybrid Warfare 2.0". The Ukrainian vulnerabilities and the integrated approach of Russian power assets provided the ideal background for this type of operation.

Military actions conducted by conventional forces during hybrid warfare use a wide variety of intelligence assets which must provide commander support for decision making process in real time and appropriately. Still the specifics of hybrid warfare, especially those related to non-state actor (chain of command, strength, equipment, TTPs, etc) pose a series of challenges towards Intel support.

Keywords: *hybrid warfare, military actions, conventional units, intelligence.*

Hybrid warfare – term and historical approaches

The term "hybrid" comes from the Latin word "hibridia" and is used in biology to characterize a living organism obtained by crossing two different bodies. The term was adopted in other areas with a figurative sense that defines concepts by combining results of phenomena or processes, and the result although taking features from the elements combined, still has its own attributes.

According to F. Hoffman "hybrid war manifestation encompasses a wide range of different types of war that includes conventional capabilities, formations and tactics irregular / asymmetric, terrorist acts and violent nature of coercion and criminal disorder." Regarding the

hybrid war, Chief of Staff of Russian Armed Forces, General Valery Gerasimov, said "methods of conflict have changed and now involves massive recourse to measures of political, economic, informational, humanitarian and other non-military measures." He also stated that "the basic rules of war have changed, and the importance of non-military means to achieve political and strategic objectives grew. The war also leads in the political, economic, informational and humanitarian. Special Forces information operations and actions are key elements in the conduct of hostilities. In contrast, conventional military forces are used as a threat only to a certain stage, to ensure final victory."

The term „hybrid warfare” is again trying to define a new type of conflict that encompasses all dimensions contained in an independent country/society/community. Although the term itself is new, definitive actions by it are as old as the notion of conflict, and we see that it can try to define a conflict in the early stages. War begins when the belligerents acquires the conflict. Until this state, we have a series of events / incidents may preparatory, which creates the conditions for triggering the conflict itself. I believe that the necessity of hybrid war concept was driven by the growing laws of war, and especially by not regulating the basic determinants that lead to actual conflict.

Why an actor would resort to this kind of war? Is the first question to answer in order to clarify the concept? In recent history, the most common reason is that a great power loses its area of influence.

The second question should clarify the methods used to achieve the strategic objective. Nowadays, having clearly studied the effects of the Second World War is not acceptable to start a war to restore the influence. It would create coalitions against the aggressor state, which would make a mistake and would be in a disadvantageous position. However, the aggressor state has to find solutions to restore areas of influence in terms of: our day war regulation, the international treaties, massacres of the Second World War that culminated in the use of nuclear weapons, the explosion of information. The solutions are actually forms of struggle adopted to lead this war.

The political war not only puts pressure on the State target but also on the entire region. It must be driven with skill and must erode public confidence in the permanent elements of the state. The economic war degrades the physical welfare and in very short time this component can be effective. In social conflicts, all existent State targets can be exploited indirectly by ethnic conflict as direct augmentation by creating artificial conflicts, for example vanquish industrial platforms that are sources of income for entire communities.

All components of society are exposed and can be attacked / influenced directly or indirectly. The key element is information, which is the vehicle that shapes people's perceptions. End all actions are people who carefully directed, will accept the new state of affairs imposed.

Comparing with the classic hybrid warfare note that although the ultimate goal is the same, the combat forces are totally different, regular armed forces move from battle to display of force and propaganda grow exponentially. Basic for the classic war is to conquer areas and to establish governments but in the hybrid war is to impose effective influence without a fight. Public perception of the events is to accept the status quo. If in the first case, people clearly understand the result of the battle, in the hybrid war, they accept unconsciously the realities as a new stage of life.

The physiognomy of tactical military actions in terms of hybrid warfare

The physiognomy of hybrid warfare represents a combination of older forms of power tools, conventional methods verified and tested over the conflict, under an unconventional approach. The latest example of hybrid warfare is the Russian Federation's actions that

combined smart modern warfare requirements imposed by technological progress, globalization and global interconnection, with elements of classical offensive. The integration and use of all these elements to achieve political and strategic objectives, using methods that by the standards of NATO are at the edge of armed conflict, with a rapid phase development that does not allow an immediate reaction and produce the futility of any action in response, determined us to reach the conclusion that we face an "reinvented" war: " The Hybrid warfare version 2.0" - a brand new version of " unrestricted war " - the concept that was stated in 1999 by the Chinese General Qiao Liang, a complex war without limits and rules with elements of political, diplomatic economic, military, technological, cultural and religious.

From a historical perspective, the Russian Federation, has enough war experience that allowed it to draw many lessons in the matter of classical operations, insurgency and counter-insurgency actions from the conflict in Afghanistan and in the aftermath of the collapse of the Soviet Union, even if not actually involved in wars, knew how to be a good observer, to extract information, to analyze the western doctrine and strategy and the implementation thereof. the Russian Federation managed to determine doctrinal and strategic vulnerabilities. Identifying these opportunities, the Russian Federation has developed new methods based on its experience and tailored precisely to exploit these vulnerabilities.

Analyzing the Russian actions presented as documentaries and public reports, we consider the differentiation of three major stages of this type of conflict:

- A stage for shaping environment of confrontation. This step is a lasting one, characterized mostly by the integrated action of non-military tools. This step is not perceived as an actual war but its aimed goals to create conditions in order to support the achieving of political and strategic objectives of the next stage.

- A stage of the conflict itself. This step is conducted in several fast developing phases. The purpose of this step is to achieve political and strategic objectives as quickly as possible so to the start of NATO planning process, according to the doctrine, this phase is already finished. This stage is characterized by integrated military action, regular and special, high mobility and superior technology of attacking forces.

- A third stage is represented by the consolidation and control of conquered territories. This stage has a lasting duration of time being characterized by fighting and clashes over new dividing lines, denial of involvement and possible intervention to protect ethnic Russian population in the affected areas.

Stage I - Shaping the confrontation environment

The SHAPE stage of the hybrid conflict starts long before the outbreak of the conflict itself, serving to shape the environment of confrontation and pave the way for the conflict itself. Also in this phase the attacker identifies the opponent's vulnerabilities and all the opportunities of any nature that can be exploited to support the hybrid action, taking into account the goals and objectives to be achieved.

At this stage, the attacker runs specific actions for obtaining information, influencing people and the international public opinion, identification of key infrastructure and characters that play a special role in the future operation, testing the modalities of response to surveillance actions, electronic warfare and cyber-attacks, identify resources and critical equipment, the redeployment in more favourable positions using pre-planned exercises and conceal them in order to be introduced in battle and especially the integrated pre-plan action of the intelligence services, armed forces and irregular or non-military elements involved in the confrontation.

Stage II - The main confrontation

The physiognomy of tactical conflict arises, as in any other types of operations, from the operational and strategic levels, but takes on greater importance because the fights and clashes of tactical subunits are visible and often reported by the media, while the operational

and strategic levels are often unseen and vehemently denied by the aggressor. Moreover strategic and operational objectives can be met directly by tactical level subunits. For these reasons the differentiation between strategic, operational and tactical actions it is difficult to be done and they overlap in many phases of the conflict. The stage sequences takes place very quickly, in some cases even merging, so their development is to be completed before the international public pressure shows its effects.

Phase 1 – The infiltration of initial elements

By studying the actions of the Russian Federation forces in eastern Ukraine and Crimea, we believe that in the first phase the unconventional elements, agents of intelligence services, key personnel, terrorist cells or groups of rebels prepared during stage the SHAPE, are to be infiltrated. The role of these elements is to create disorder, confusion and facilitate taking the administrative centres of the regions concerned and create the image in international public opinion to an uprising of the local population.

Phase 2 – The combat introduction of the special units and special equipments designed for reconnaissance and monitoring

At this stage it is envisaged the deployment of special units and special equipments designed for reconnaissance and monitoring in the vicinity of the selected regions and their usage to develop activities which may include but not limited to: information based operations, surveillance actions and real-time information gathering, setting up the electronic warfare equipments (needed for jamming and interception), the supply of the rebel groups and terrorist elements with the weapons and necessary equipments and occupying the administrative centres and the key points, cyber attacks of the critical infrastructure (especially for blocking their operations), corrupting or ordering to the individuals of the armed and the security forces leadership to surrender without any fight and distribute their armament to the rebel entities. This stage is characterized by technological superiority manifestation of the attacker, integrated actions of the attacking forces based on clear and accurate information. Thus, the Russian Federation has shown that it is able to deploy an impressive number of agents and Special Forces units in a very short time, in an integrated manner and avoiding engaging them directly into combat operations. That was possible using the rebel elements established during SHAPE stage, carefully managed, monitored and continuous supported with information.

Tactical units of the armed forces and security force of the assaulted state were surprised by the rapidity of the events, were "blinded" in terms of information, were fed with false information and they perceived very late the existence of an aggression. So, many of them there are not operational at the time and they lack the ability to react. Furthermore, those that are able to react do not have the adequate procedures for this situation and the command and controls elements are in disarray.

This stage aim is to amplify the image of the local population revolution for public opinion and to emphasize the impossibility of the authorities to manage the situation. Media presented information about the massive desertion of the military units and security forces and frequently armament and equipments and abandonment. Thus, at the end of this phase the administrative centres were under control, fire support elements and logistics were installed near the border, surveillance and research equipments operated at full capacity, electronic warfare elements were installed, critical infrastructure was controlled by the attackers.

Phase 3 – The Command and Control disorganization and restraining the opponent.

This stage envisages territories disconnected from networks and state infrastructure by exploiting equipments and technology installed in the previous step. Therefore, tactical units of the armed and security forces of these territories are divided spatially disconnected from

the upper echelons and they are under pressure of the rebel groups, unable to contact or receive support of any kind from their upper echelons.

Field Artillery and Antiaircraft Artillery established on the aggressor state territory, near the border, act punctual for destroying important targets and to forbid local air force. Unmarked military units, columns of military and supply convoys are travelling to the conflict areas.

Phase 4 – The resistance destruction, the new enemy forces entry interdiction and the strengthening of the alignments.

Once you have performed specific actions of disconnection, disruption, fractionation and immobilization of the armed forces and security units, can begin classical offensive operations in order to fulfil their destruction, in the same time with securing the access roads and airports in order to ban their new forces entrance (reinforcements). Thus, the attacker using the heavy armoured vehicles, equipments and high technology arms, fed with real-time information, controlling the airspace and the technical impossibility of circled forces to hit the enemy artillery, they fulfilled the goals without much loss.

Sage III - Strengthening the political, informational and military control of the conquered territory

The aim of this step is to impose and maintain total control over the conquered territories. Unlike previous step, this is a lasting stage where prevailing local confrontations and clashes along the line demarcation between the two conflicting forces. Obviously the local armed forces, supported by the international community, are in a process of comprehensive reform, with the aim to raise their operational capacity in order to recover as much of the lost territory. State aggressor continues to deny involvement in the conflict, despite evidence presented in numerous international reports. Pro-enemy forces carried out actions to maintain alignment and sabotage actions by local security forces, under the guidance of enemy elements acting undercover.

Challenges regarding intelligence support

Following those mentioned in the previous chapters we can highlight the fact that in most of the cases conventional units were engaged in the conflict, usually, in the final phase, only when all the others means failed or the objectives established for these were accomplished and it was needed to move on to military actions.

Using this temporal landmark and combat task organization for conventional units I will study the collection possibilities which are available, operational limits for collection assets and the factors that may affect providing commanders the information they need in order to accomplish their tasks successfully.

Contemporary operational environment conditions allow, usually, the engagement of operational and tactical level units in operations. Studying the order of battle of these units, as well as training fields we may assume that in most cases these units are more focused on classical operations and less on stability and support operations (much more appropriate for hybrid warfare).

Experience gained by armed forces during conflicts they were involved in made possible the creation of specialized units with special equipment in order to provide intelligence support for various operations. Some collection assets were embodied within units and major tactical units; others were kept separately and used just on a specific mission in support of military units.

Technological evolution, mostly reflected in the military, provided the military with superior surveillance capabilities used on the battlefield in order to ensure early warning over enemy actions. Still, there were identified situations when technical means were not able to

provide the information needed and collection assets turned to HUMINT for obtaining that information necessary to accomplish successfully the objectives.

Also, we must highlight the fact that part of the non-state actors involved in conflicts got in possession of quantities and quality weapons and other systems similar to those of the conventional units which allowed these actors to conduct operations that created significant casualties within conventional units. Most of these non-state actors got support, finance and equipment from outside actors due to the fact that their interests were convergent to those of the non-state.

The challenges faced by conventional units deployed in hybrid warfare operations led to the establishment of collection assets from HUMINT, SIGINT, IMINT and MASINT (aerial surveillance, electromagnetic spectre surveillance, jamming and intercept, ground radars, infra-red and thermal imaging analysis), OSINT and DOCEX.

This wide variety of assets available for commanders may provide a continuous and consistent flow of information about enemy whereabouts. The collection must be focused on enemy's order of battle, identification of leaders/ commanders and members, operating areas, safe heavens, TTPs, equipment available and used in operations, lines of support with equipment, personnel, finance and targets. Despite of these assets the enemy specific for hybrid warfare manages to hide most of the issues presented previously, and all those assets may not perform ideally.

Regarding the use of HUMINT provided by local nationals and internationals from the operations area, experience showed that these sensors may provide Intel with high importance, but sometimes we need to double check this Intel using other means. We must also take into the fact that the enemy uses subversion and disinformation operations in order to protect its intentions and mislead us over his real capabilities. These issues represent a significant challenge for soldiers involved in analysis, evaluation, fuse and dissemination of HUMINT products.

Capabilities of UAS allowed the use of these assets in all conditions, wide range, both day and night time. But, some of the non-state actors were trained in concealment and disguise actions for staging/ operational capacity rebuilding/ storing areas, training that helped them to protect part of their critical infrastructure and/ or actions. The fact that most of the non-state actors have thorough knowledge of terrain and they use maximum potential for concealment enabled them to establish protective measures which made it difficult for UAS to keep under surveillance certain areas. Also, mutual interests of third parties whom have equipment able to attack UAS in electro-optic spectre led to the use of that equipment in support of non-state actors in order to prevent collection through UAS.

Development of IT and communications for civilians allowed some of the non-state actors to become part of the hybrid warfare, to utilize such devices in order to better coordinate their actions against conventional units belonging to state actors. Although some of that equipment is known within the military and may be tackled, there is equipment that provides secured communications among non-state actors' combat cells. There are non-state actors that do not possess such equipment and regularly use private mobile networks in order to coordinate their actions by using a set of encrypted messages. In order to be able to prevent such coordinating techniques it would need to suspend the activity of the private mobile networks, action that affects the rights of local population to communicate freely and unrestrictedly and may lead to deterioration of relationship between conventional forces and local population.

When it comes to monitoring the online and the informational operations conducted through this tool, several challenges have been identified regarding the credibility of the information available on certain sites, credibility of the persons that post such information and checking that information. There are certain aspects of the conflicts in Ukraine and Syria that

highlight the fact that insurgents/ separatists from those countries have organized structures responsible for using the online medium in order to misinform local population and International Community regarding realities of the operational environment. Having this in mind, soldiers designated to observe the online medium must identify websites, users and the information posted that may affect the relationship with the local population from the area of responsibility and must present the commander with adequate measures for deterring and mitigating hybrid warfare enemy actions.

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SOME APPROACHES REGARDING THE ROLE OF THE INTERNAL FINANCIAL CONTROLLER AS A PART OF THE MANAGERIAL CONTROL IN PUBLIC AND PRIVATE ENTITIES AND THOSE BELONGING TO THE MINISTRY OF NATIONAL DEFENCE

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Abstract: *In this article, we have approached four essential problems: 1) the substantive elements regarding internal control / management in public and private structures of Romania; 2) some basic guidelines on preventive financial control as part of the internal control / management in public and private structures of Romania; 3) certain requirements regarding internal control / management and preventive financial structures of the Ministry of National Defence, 4) conclusions and proposals.*

Keywords: *control; internal/managerial control; financial control; preventive financial control; delegated financial control.*

Some background elements regarding internal control/management in public and private structures in Romania

Firstly, we will refer to the provisions of some normative acts of reference and in the first place to OMFP nr. 946¹ from July 4, 2005 for the approval of the Internal Control Code, including the standards of management/internal control of the public entities and for the development of managerial control systems.

This order carries out a new approach to the internal control. The *communitarian acquis* in the internal control field is composed largely from the general principles of good practice, internationally accepted in The European Union. The manner in which these principles are transposed into management/internal control systems is specific to each country, taking into account the constitutional, administrative, legislative, cultural etc conditions.

In the context of the general principles of good practices that make up the *communitarian acquis*, much wider acceptations is associated to the control, this being regarded as a managerial function and not as a check operation.

Through the control function, management finds the irregularities of the results from the objective, analyzes the causes that brought them and finds the corrective and preventive measures that have to be taken.

The objectives of the public entity can be grouped in three categories: 1) Effectiveness and efficiency of the operation; 2) The reliability of internal and external information; 3) Compliance with the laws, regulations and internal policies.

In the public entity, the general objectives decompose in derivate objectives, which in turn, break down into specific objectives (individual), forming a coherent ensemble.

¹It was published in The Official Monitor of Romania, Part I, nr. 675 from July 28, 2005.

Formulating objectives can be qualitative or quantitative, but, in any case, they must be defined as results indicators, as much as possible commensurable.

To carry out the objectives, appropriate activities are performed, to which is necessary to allocate resources.

The activities through which the objectives are carried out (individual, derivated and general) are transposed into tasks (elementary component), attributions and functions (aggregated components) and are assigned, to be carried out, to the structural components of the public entity (posts and bays). This leads to the definition of organizational adequate structure for the achievement of the objectives.

The managerial control cannot work out without a plan and an adequate organizational structure.

The events that may affect the achievement of the objectives consist in risks that have to be identified. The management has the obligation to identify the risks and to work out those actions that place and maintain the risks in acceptable limits. A balance between the acceptable level of risks and the costs of the actions involved has to be maintained. To achieve the objectives, the balance must be ensured between tasks, authority (decision-making authority conferred by delegation) and responsibilities (the obligation of achieving the objectives) and to define **procedures**.

The procedures represent the steps that have to be followed (the algorithm) in the achievement of the tasks, the exercise of the powers and the commitment of responsibilities. In this context, it is said about the internal control that: 1) it is integrated in the management of each of the structural components of the public entity; 2) enter in the care of the staff at all levels; 3) provides a reasonable assurance of achieving the objectives, starting with the individual ones and finishing with the general ones.

The control is present on all the bearings of the public entity and is manifested in the form of own-checks, control in chain (on stages of the trial) and hierarchical control.

In terms of the timing of the exercise, control is concurrently (Force), ex-ante (feed-forward) and ex-post (feed-back).

For a proper understanding of the concept of internal control, viewed through the prism of the general principles of good practice accepted internationally and in the European Union, I present below the definition adopted by the European Commission.

Internal control is defined as all policies and procedures designed and implemented by the public entity management and staff in order to provide reasonable assurance for: a) the public entity's objectives in an economic, efficient and effective way; b) compliance with external rules and policies and management rules; c) protection of assets and information; d) prevention and detection of fraud and errors; e) quality of accounting documents and timely production of reliable information on financial management segment.

Basic act underlying the creation of standards for internal control management control is code public entities approved by the Secretary General of the Government Order No. 400/2015² approving the Internal Control Code / managerial public entities, as amended and supplemented.

This order gleans some basic elements. The organization of internal control / management of any public entity, the achievement of three categories of permanent objectives can be grouped as follows: 1) targets on the effectiveness and operating efficiency (include objectives related to the goals of the public entity and use conditions of economy, effectiveness and efficiency of resources, including resource protection objectives of the public entity of misuse or loss and the identification and management of liabilities); 2) objective about the reliability of information internal and external (include objectives related to an accounting adequate quality of information used in public entity or disseminated by third parties, as well as protecting documents against the two types of fraud: concealing fraud

and distortion results); 3) objectives relating to compliance with laws, regulations and internal policies (include targets for ensuring that the entity's operations are conducted in compliance with obligations under the laws and regulations, and compliance with internal policies).

Designing and implementing a viable system of internal control is possible only provided that the system meet the following requirements: a) be adapted to the size, complexity and specific environmental entity; b) involving all levels of management and all activities/operations; c) be constructed with the same "tool" in all public entities; d) to provide reasonable assurance that the entity's objectives will be achieved; e) costs of applying internal control system to lower the benefits from it; f) be governed by the rules contained in the minimum management standards for internal/managerial control.

The activities of internal / managerial control are part of the management-oriented objectives set and include a diverse range of policies and procedures concerning: the authorization and approval, segregation of duties, access to resources and documents, verification, reconciliation, performance analysis of operation, review of operations, processes and activities, supervision.

This activity involves the application of specific standards. The standards are grouped under the five key elements of internal control / management: 1) control environment (which groups the problems of organization, human resource management, ethics, ethics and integrity); 2) performance and risk management (targeting this key management issues related to setting objectives, planning - annual planning, programming - management plan and performance - performance monitoring); 3) control activities (grouped standards in this key internal control / management focuses on: documentation of procedures, business continuity, recording exceptions - deviations from procedures; separation of duties, supervision, etc.); 4) information and communication (in this section are grouped issues related to creating an adequate information system and a system of reports on implementation of the management plan, budget, resource and document management); 5) evaluation and audit.

The issues covered by this group of standards for evaluation capacity development of internal control / management in order to ensure continuity of the process to improve it. Each standard is divided into three components: 1) standard description - presents the defining features of domain management referred standard, the secured by its title; 2) general requirements - has to be driven in determining directions to meet the standard; 3) Main references - lists representative normative acts include regulations applicable standard.

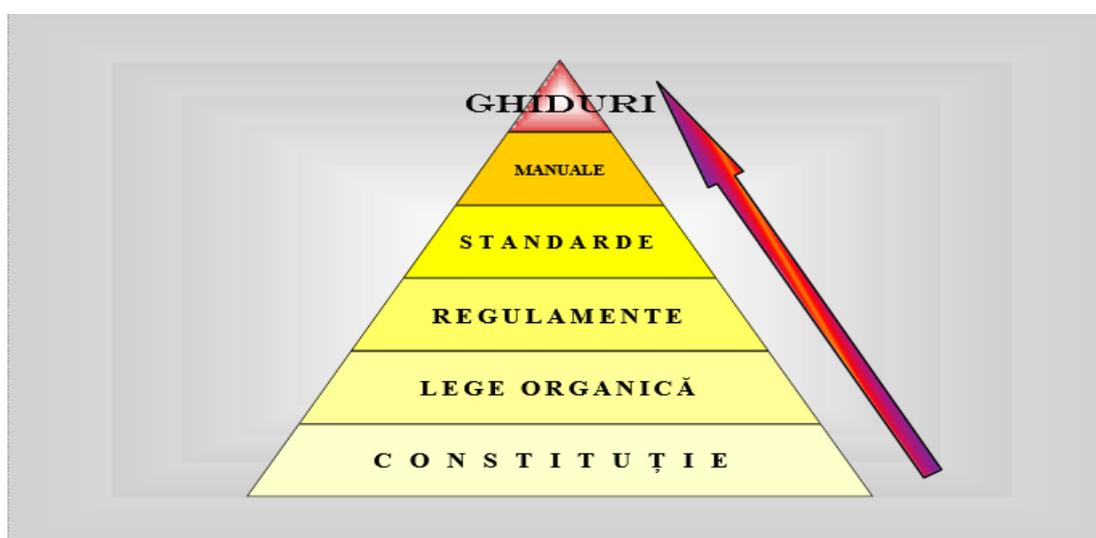
We present below THE STANDARDS FOR INTERNAL CONTROL / MANAGEMENT OF PUBLIC ENTITIES: Control Environment: Standard one-ethics and integrity; Standard 2-Powers, functions, tasks; Standard 3-Competence, performance; Standard 4-organizational structure; **Performance and risk management:** The standard 5-Point; Standard 6 - Planning; 7 Monitoring the performance standard; Risk Management Standard 8; **Control activities:** Standard 9-Procedures; Standard 10 Supervision; Business continuity standard 11; **Information and communication:** Standard 12 information and communication; Document management standard 13; Standard 14-accounting and financial reporting; **Evaluation and Audit:** Standard 15 - Assessment of internal / managerial control; Standard 16-Internal Audit.

Still we want to bring to your attention a few opinions of institutions and experts knowledgeable in the field of internal control.

We began referring to the action taken by the **Court of Accounts**²³ to reform internal control in public institutions.

² We consider the work of the Court of Accounts, User rating system of internal control in public entities, Bucharest, 2011, pp. 3-4.

In the ongoing process of Public Administration Reform in Romania, involving institutions such as the Parliament, Ministry of Finance, Ministry of Interior etc. Court of Auditors plays an important role. This reform relates to the propensity to overall efforts to improve the management, administrative capacity and how it is organized entire public sector. Moreover, Public Expenditure Management focuses specifically to the budget, accounting, financial management and internal control. In turn, the internal control environment currently revolve around some important elements such as the national budget accounting system , budget programs, external audit and the fight against fraud / irregularities. In this context, to strengthen institutional capacity, sustained permanent management of the Court, have taken a series of measures in terms of improvement of quality of public external audit. Guide assessment of internal control systems in public entities, is just one example of elements of progress. Efforts were made substantial completion methodologies and procedures applicable to the activity of the Court of Accounts, guide we refer representing an element peak pyramid improving audit methods specific to the audit institutions of modern (as you can see in the chart down from the manual evaluation of the internal control system in public entities, developed by the Court of Accounts in 2011, p.3).



Annexes guide includes all documents that are part of good governance guide, prepared by the Internal Control Committee standard - INTOSAI and was meant as a guide for managers in both public entities and for public external auditors.

This includes: 1) INTOSAI GOV 9100, Guidelines on Internal Control Standards in Public Sector; 2) INTOSAI GOV 9110-Guide for reporting on the effectiveness of internal controls: The experiences of SAIs in the implementation and evaluation of internal controls; 3) INTOSAI GOV 9120 Internal Control-Obtaining bases for liability of public entities; 4) INTOSAI GOV 9130-Further information on Entity Risk Management; 5) INTOSAI GOV 9140-Internal Audit Independence in the Public Sector; 6) INTOSAI GOV 9150-coordination and cooperation between SAI and public sector internal auditors.

Internal control, vision specialists from the private area³, is a tool used by the executive management and is directly linked to the objectives of the institution. Implementation of internal control requires firm commitment from management, close

³ We refer to opinions expressed by Șerbănescu Cosmin, president of the Institute of Internal Control in Romania and Vintilescu Belciug Adrian, senior researcher at the Institute of Internal Control in Romania, in the article "Analysis of the implementation of internal control standards by data mining techniques" published in Audit financial, Nr. 8 (128) / 2015, pp. 41-62.

monitoring of optimal functioning and proper communication between employees and management.

Internal controls can provide absolute assurance management on achieving objectives, no matter how well designed and implemented. Experimentation operation of internal control systems demonstrated that its management is reflected only in so far as control is integrated management process of public institutions .

It is obvious that the internal control work is not performed by a distinct structure, "an ensemble of forms of control". COSO⁵ has compiled into a graphic form internal control - pyramid internal control (Figure 1), which comprises four levels: control environment, performance and risk management, control activities, information and monitoring, auditing and evaluation (as you can see in Figure 1 below).

Figura 1. Piramida controlului intern



Sursa: Committee of Sponsoring Organizations of the Treadway Commission

Internal control comprises a set of 25 standards that correspond to certain sections of the pyramid internal control group (standard components above the pyramid is shown below).

Figura 2. Standardele de control intern și gruparea acestora în funcție de piramida controlului intern

Standard	Tip
Etica, Integritatea	Mediu de control
Atribuții, funcții, sarcini	Mediu de control
Competența, performanța	Mediu de control
Funcții sensibile	Mediu de control
Delegarea	Mediu de control
Structura organizatorică	Mediu de control
Obiective	Performanța și managementul riscurilor
Planificarea	Performanța și managementul riscurilor
Coordonarea	Performanța și managementul riscurilor
Monitorizarea performanțelor	Performanța și managementul riscurilor
Managementul riscului	Performanța și managementul riscurilor
Ipoteze, reevaluări	Performanța și managementul riscurilor
Informarea	Informare și comunicare
Comunicarea	Informare și comunicare
Corespondența și arhivarea	Informare și comunicare
Semnalarea neregularităților	Informare și comunicare
Proceduri	Activități de control
Separarea atribuțiilor	Activități de control
Supravegherea	Activități de control
Gestionarea abaterilor	Activități de control
Continuitatea activității	Activități de control
Strategii de control	Activități de control
Accesul la resurse	Activități de control
Verificarea și evaluarea controlului	Auditarea și evaluarea
Auditul intern	Auditarea și evaluarea

Sursa: Proiecția autorilor

An outstanding specialist, who is also a university professor⁴⁶, revealed in an article, that in reality, control intertwines and is harmonized with the rest of the management process. Between planning functions of management and control exists an inextricable link, they are influencing one another, which makes be called "Siamese brothers of management."

Control is a performance measurement process, initiating and undertaking actions to ensure the desired results. Looked at from various viewpoints, control is considered: 1) function of management - through him every manager wants to ensure that the work goes according to the program default, that resources are used properly set and ultimately actual performance will reach or exceed targets initially⁷; 2) attribute of leadership - a means of improving the activities of public and private entities, exercised under different forms of organized pyramidal structure with clearly defined responsibilities and objectives of law; 3) method of verification of the management of resources . Form of internal control, financial control "is exercised over all operations that affect public funds and / or public domain"⁴⁸.

Further, we bring to attention some views of another prominent specialist in internal control and audit internal control⁹ on existing models in the practice of this activity.

Delicate issue of internal controls implemented within the organization and reasonable level of assurance that management should have him on its functionality have been the focus of various professional bodies and specialists in the field. The result of these concerns was to find practical solutions viable models materialized in the form of internal control. Identified several such internal control models: COSO, CoCo, CobiT, SAC.

Given the frequency with which these models are used for internal control, we can mention the first two, which have the greatest importance, relevance and are widely used:

- **the model COSO** - used in the private sector in Europe, and increasingly more and more organizations in the US, particularly those involved in international trade;
- **the model CoCo** - used in public and private sectors in Canada.

Of course addressing internal control / management did under study for many Romanian and foreign specialists, who would have deserved to be brought to their attention, but for reasons of specific limits of such research, we can not do this.

Some basic guidelines on preventive financial control as part of the internal control / management in public and private structures in Romania

In this part of the communication we present some very important aspects of some basic regulations and this type of control current (financial control) and begin with Order no. 923/2014⁶ approving the Methodological Norms on general preventive financial control and a specific code of professional ethics for people performing the preventive financial control, regulation subsequently amended by Order no. 1139/2015⁷ amending and supplementing Order no. 923/2014 approving the Methodological Norms on general preventive financial control and a specific code of professional ethics for people performing the preventive financial control.

⁴ Committee of Sponsoring Organizations of the Treadway Commission, Internal control - integrated framework (1994).

⁵ We refer to Florișteanu Elena article entitled "Considerations on preventive financial control exercised in public institutions", published in 2003 at the Army Academy Nicolae Bălcescu in Sibiu.

⁶ Ionescu, Gh., Gheorghe, and collaborators, organizational management, the publisher of the rostrum of the Economic, Bucharest, 2001, p. 354.

⁷ Law no 500/2002 - on public finance, published in the Official Gazette of Romania, Part I, no. 597/13 August 2002, Article 23;

Preventive financial control aims to identify projects of operations (hereinafter the Operations) not meeting the requirements of legality and regularity and / or, where appropriate, employment within the destination budget appropriations and the commitment and performance of which would harm the public domain and / or public funds

Subject to preventive financial control operations aimed mainly: 1) legal commitments and budget commitments; 2) opening and allocation of budget appropriations; 3) modifying the distribution by quarters and subdivisions of the budgetary classification of approved loans, including credit transfers; 4) authorization of expenditure; 5) public revenues in respect of authorization and establishment of titles of collection; 6) lease or rental of goods belonging to the public domain or administrative-territorial units; 7) the sale, pledge, assignment or lease of goods belonging to the private domain of the State or territorial administrative units; 8) other categories of transactions established by order of Minister of Public Finance.

Public entities that are organized financial control are: 1) public authorities and autonomous administrative authorities; 2) public institutions belonging to central and local government and public institutions subordinated to them; 3) RAs of local or national interest; 4) companies or domestic companies; 5) companies in which the state or an administrative-territorial unit holds majority ownership and use / manage public funds and / or public property; 6) agencies, with or without legal personality, which manages funds from external financing grants or loans; 7) Ministry of Finance, treasury operations, public debt, achieving and state revenues of Romania's contribution to the EU budget; 8) executive public authorities of local government, public debt operations and achieve their own revenue.

Financial control over operations representing recoveries of amounts used and found later as unfair - both for domestic funds, and those related to funding from the European Union - is organized structures responsible for the recovery of such amounts, in accordance with specific methodological . In all cases where public entities manage funds from external financing, the rules for exercising the preventive financial control integrates regulations and procedures of the funding bodies.

Preventive financial control is exercised over all operations that affect public funds and / or assets. This preventive financial control is exercised over documents are recorded property transactions before they become legal documents through approval by the right holder or the holder of the power of delegated powers under the law. Not covered preventive financial control analysis and certification of financial statements and / or property and no checking of operations already carried out.

Financial control consists of a systematic check of its operations being in terms of: a) compliance with all legal requirements applicable to them, in effect at the time of operations (control of legality); b) the fulfilment of all aspects of the principles and rules applicable procedural and methodological categories of operations which includes operations under control (control of regularity); c) classification and destination within budget appropriations and / or commitment, if applicable (Budgetary Control). Leaders specialty departments responsible for the accuracy, regularity and legality of transactions whose acts and / or documents they have certified or approved. Preventive financial control visa for operations, which are based on acts and / or certified or approved documents, which are subsequently proven false, inaccurate or unlawful, not exonerates the chiefs' specialty or other competent persons within them.

Preventive financial control is held, usually in the specialized compartments accounting. In the nature of operations, the head of the public entity can decide its spread in other specialized departments is initiated by legal acts, or state liabilities or other obligations of patrimonial nature.

Preventive financial control is exercised through visa for people from the specialized compartments designated for that purpose by the head of the public entity. The instrument appointing includes limits on its exercise of jurisdiction. People who are exercising financial control, other than those subject to visa, approve and perform the operation.

Target preventive financial control include the following information: name of the public entity; mention "targeted for preventive financial control"; ID visa holder; signature of the person appointed to exercise the visa and the visa grant date (year, month, day). Target preventive financial control is exercised by hand or electronically. If exercise handwritten, seal number identifier visa holder is held by the designated person.

In the event of documents in electronic form, visa preventive financial control is exercised by the extended electronic signature of a person authorized for this purpose, using a secured device for creating electronic signature, approved, issued under the law by a service provider certification authorized if the electronic certificate is expired, suspended or revoked at the signing. In this case, the visa holder's ID name and surname containing qualified digital certificate.

Public entities to which financial control is exercised and on the documents in electronic form, applying the extended electronic signature, updates specific norms on organization and exercising preventive financial control with adequate provisions in this regard. Data from documents submitted to the preventive financial control visa shall be entered in the register of transactions submitted preventive financial control visa (the registry).

The deadline for ruling (granting / refusing the visa) is determined by an internal decision by the head of the public entity depending on the nature and complexity of the operations in general and / or specific operations subject to preventive control. As a specialized body of the Government in the field of finance, Ministry of Finance may exercise the delegated controllers appointed by the minister, financial control some public entities on operations that may affect the implementation of the conditions of balance budgets or They are associated with risk categories determined by specific risk analysis methodology.

Delegated preventive financial control is exercised at the level of the main spending budgets expressly stipulated in Government Ordinance no. 119/1999⁸¹² on internal control / management and preventive financial control, republished, as amended and supplemented. Also, Finance Minister shall appoint one or more delegated controllers for the operation of the Treasury budget for operations on public debt and other specific operations Ministry of Finance.

As an exception to this rule, under an express provision of Government Ordinance no. 119/1999, republished, as amended and supplemented, by order, Finance Minister may decide to exercise the preventive financial control and the operations financed or co-financed from public funds of some secondary or tertiary authorizing officer or legal persons of private law if these menus by a high volume of budget appropriations and / or commitment or significant parts of approved programs and operations involve a high degree of risk.

To ensure financial management, in terms of legality, economy and efficiency of the funds granted to Romania by the European Union and the implementation of procedures laid down in the Regulations funding bodies, Finance Minister called delegated controllers to the implementation structures in accordance with the legal provisions specific to them.

Regarding the powers delegated controller formulating an advisory opinion on compliance, economy, efficiency and effectiveness of operations or draft laws, if they have an impact on public funds.

⁸ Was published in the Official Gazette of Romania, Part I, no. 430 of 31 August 1999

However, the delegated controllers advisory opinions may refer the legality and regularity of operations or which shall be made in the future with certainty or actions and / or inactions leading to administrative irregularity or illegality situation.

The opinion shall be completed: 1) initiative delegated controller; 2) request of the minister of public finances; 3) request authorizing officer. Oversight of budget execution in terms of balance and prudence, by exercising control over operations on the visa granting credits, allocation and withdrawal of credits, credit transfers and modifying the distribution per quarters of the budgetary appropriations.

The following are some opinions of prestigious specialists in the field about financial control. One of these specialists is Professor Mircea Boulescu¹³ from one of the works, which will present some issues.

Financial control system is an indispensable tool for regular monitoring of business management entity. Management is the effort to organize and operate in accordance with laws of the market to improve knowledge and the management of economic potential and risk prevention, deficiencies and shortcomings in their work.

Management consists in a real mood that increasingly opposes backwardness and passivity, turning into a general public interest to achieve maximum efficiency in any action.

In this respect, the French economist Henry Fayol¹⁴ (considered alongside FWTaylor as the father of science management), corporate governance defined by five main functions: provision, organization, command, coordination and control. In this context, the control is at macro and micro level, an effective and necessary function of management.

Financial control, as an integral part of management, and as a form of knowledge, is the expression of objective necessity, which gives a wider and multiple meanings that goes beyond the strict interests of the trader.

Thus, the same control that is carried throughout the entity has a triple meaning, while being a self-control (control pad), a control others (external control) and a control state (public scrutiny). Important Ideas about preventive financial control and people should conduct such a review I met two other specialists.

Own preventive financial control has the nature of an internal control is controlling this content organized by public institutions in the accounting departments and is exercised by the chief accountant of the preventive financial control visa. Indeed, public entities, through their leaders, have an obligation to organize preventive financial control and accounting records commitments in the compartment⁹⁵.

Persons designated by the exercise of the preventive financial control must have the professional skills required for this activity and meet specific code of professional standards developed by the Ministry of Finance, including the conditions and criteria unit that public entities must comply with the appointment, suspension, dismissal or change of personnel carrying out this activity¹⁵.

Persons entitled to exercise the preventive financial control are responsible, by law, in their guilt, for legality, regularity and compliance within approved budgetary commitments in respect of transactions for which the visa has been given preventive financial control. Persons entitled to exercise the preventive financial control may request the opinion of the legal profession whenever deemed necessities impose¹⁷

¹³Boulescu Mircea, Control financiar-fiscal, Ediția a II-a, Editura Fundației „România de Măine”, București, 2007, p. 16.

¹⁴ Fayol, H., Administration industrielle et générale, Editura Dunod, Paris, 1925, p. 59.

¹⁵ Ava Vasile, Prestarea serviciilor publice prin agenți privați, Editura All Beck, București, 2003, pp.71-73.

¹⁶ Vedinaș, Verginia, Deontologia functionarului public potrivit Legii nr.7/2004 privind Codul de conduită a funcționarilor publici, în Revista de drept public nr.1/2004, pag.71-75.

Next, we will present some ideas about delegated financial control, the other two works belonging also to reference specialists in the field.

Ministry of Finance calls for each public institution which shall act as chief credit of the state budget, the budget of state social insurance or budget of any special fund, one or more controllers delegates, depending on the volume and complexity of the public institution concerned.

Finance Minister appoints one or more delegated controllers for operations performed by the State Treasury budget for operations on public debt and for other operations specific to the Ministry of Finance. Appointment of delegates controllers is made by the Minister of Finance¹⁸.

Visa delegated controllers exercise delegated financial control of projects in advance of operations covered by the preventive financial control of the public institution.

Delegated controllers work at the headquarters of public institutions to which they were appointed. Public institutions must ensure those delegated controllers' workspace and equipment required and their staff cooperation, especially in the accounting department to perform properly the duties delegated financial control¹⁹.

Of course there are many other issues that deserved to be brought to their attention about financial control, but for reasons of limited space we can not do this.

Some requirements regarding internal control/management and preventive financial structures of the Ministry of National Defence

In order to have an efficient and effective internal management control, the Ministry of Defense is required standards implementation of internal / managerial control, as a minimum set of management rules adapted in each military entities.

The ongoing reform of the Romanian Armed Forces requires developing integrated, flexible and functional modern financial control that meets the needs of efficient use of public funds in terms of compliance, regulation and management decisions.

Measures taken in the reform of the military in general and that achieve the desires mentioned above, are components of a vision and managerial reform that awaits realization in practice to generate performance. All these terms can concentrate on the idea that, in fact, financial control as part of management control is the main sources of achieving an effective and appropriate level for any entity military regardless of its level.

Calling into question the major objectives achieved and taking into account the conceptual boundaries of management control stands out for any accents that need to be made on the issue of restructuring and modernization of the military system in general and accounting in particular.

In Romania, until the onset of the approaches to harmonize national legislative framework with the *acquis communautaire*, to join the European Union, control was organized mandatory within structures specialized functional (management, technical quality, cost, State, etc.).

Thus, organizing and exercising state control was almost solely attribute, which required the organization and controls inside the units. After 1989, though the vision control has changed - while the legal basis - unfortunately there are situations where the control is seen as an attribute of the state, or other external bodies.

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For a better understanding of the concept of "management control" has retained some of its general objectives as follows:

-realization at an appropriate level of quality, the duties of public institutions, established in accordance with their own mission under regular , effectiveness, economy and efficiency;

- Protection of public funds against losses due to error, waste, abuse or fraud;

-Development and maintenance of systems for collecting, storing, processing, updating and dissemination of data and financial information and management as well as systems and procedures adequate public information through periodical reports.

The literature identified several internal control shares, fully applicable and internal control systems / managerial created the Ministry of National Defense and military units subordinate. It is obvious that, depending on the specifics of each entity, specific situations are used to control actions, follows a certain mix consisting of all these forms / shares of internal control, or just some of them. All these actions of internal control will be applied to the management, but must be applied by each employee as well. The legal representative of the unit is responsible for organizing internal control.

Internal control actions may be developed or low-set or cancelled, depending on the evolution of risks in the entity and beyond. It is essential to note a paragraph which forms part of the general considerations embody managerial debut Internal Control Code approved by OSGG no. 400 / 12.06.2015. "Internal control / management is the responsibility of rulers, who are required to define, design, implement and to continuously improve. In this sense, we can say that a leader would entrust to third parties the entity's internal control, managerial, they will not perform their duties with good results. "

Legal provisions of the country, similar to the *acquis communautaire* shows that have achieved a clear separation between steps of implementation of internal control and internal audit. Internal audit is a form of internal control, but based on standardized working procedures, assessing its internal control and advising management, including the implementation and development of its system of internal / managerial control. The Ministry of Defence internal control / management is based on the Order No.84 / 2016¹⁰²⁰ of the Minister of National Defence for approving the rules on internal control / management in this ministry, of which we summarized further defining several aspects.

The internal control / management in the ministry is organized so as to ensure achievement of the following **three categories of permanent objectives**: a) effectiveness and efficiency of operations; b) the reliability of internal and external information; c) compliance with laws, regulations and internal policies.

Internal control / management arranged by the ministry based on the following principles: a) the principle of legality - respect the Constitution and the regulations in force; b) the principle of adaptability - adjusting to the size, complexity, environment and specific missions Romanian Army structures; c) the principle of completeness - applying to all levels of management and include all activities / activities; d) the principle of uniformity - using the same tools of internal / managerial control in all structures of the Romanian Army; e) the principle of finality - ensuring the achievement of the objectives; f) the principle of efficiency

¹⁰ It was published in the Official Gazette of Romania, Part I, no. 538 of 18 July 2016

- achieving the best results with the available resources; g) principle of effectiveness - planned objectives for each activity and the ratio between the projected and actual result of that activity; h) the principle of economy - minimizing the cost of resources used to achieve estimated results of an activity, maintaining appropriate quality of these results.

Linked to the organization of internal control / management, the ministry set up and operate, according to the hierarchical structures and the following committees: a) within the ministry, the specialized unit of the General Secretariat; b) the structures of the ministry whose commanders / chief officer by standing committees responsible for monitoring, coordination and methodological guidance to implementing and developing their systems of internal / managerial control.

General Secretariat, through its specialized structure, shall: a) monitors, coordinates and directs the methodological structures Ministry's internal control / management to achieve the objectives, maintaining risks / vulnerabilities acceptable limits, decisions appropriate to explore opportunities and overall improvement performance; b) prepare reports and briefings / summary statements provided by the legislation; c) develop, update and submit for approval to the Minister of National Defence annual risk register of the Ministry of National Defense, the procedure system adopted by the General Secretariat; d) develop information report on risk analysis; e) develop software system development of internal / managerial control of the Ministry of Defence and submit it for approval to the Minister of National Defence; f) monitor the system of training of staff in the Ministry's internal control / management.

Financial control of the Ministry of Defense as part of internal control / management is organized ASTEL as to achieve permanent main objectives, namely effectiveness and efficiency of operation, reliability of internal and external information and compliance with laws, regulations and internal policies.

Financial control in the management control lead to enhanced integrity, reducing vulnerabilities and risks of corruption in military establishments.

Organization management control within the entities is based on the following principles: the principle of legality, adaptability, the principle of completeness, uniformity principle, the principle of finality, efficiency principle, the principle of effectiveness and the principle of economy.

According to specialists in the field of management control, commanders / chiefs who act as authorizing officers must "... develop and maintain annual development program of internal control / management structure and send it to the next higher echelon for information and harmonization"²¹.

Objectives should be formulated to meet the requirements SMART package, ie they must meet specific criteria to be measurable, achievable, and realistic and have an achievement term. Performance measurement indicators are necessary to provide the information sector subject to review with compatible set of performance measures.

Commanders / Heads entities military who act as authorizing officers are responsible for organizing and keeping up to date the accounting and presentation of the deadlines of the financial statements on assets under management and budget execution, to ensure the accuracy of all accounting information under control. In the military units, the chief accountant ensure the quality of accounting data and information, which reflect the actual assets and liabilities.

Financial control and internal control in financial accounting are part of internal control / management and are insured by the Department accounting. Financial control is a process full dynamic that continuously adapts to changes in the military, the officer with staff with management at all levels are required to identify risks, aiming at the missions and objectives.

CONCLUSIONS and PROPOSALS

Of the new set up here, we drew **the following important conclusions:**

1) The issues of internal control / management and financial control are issues of critical importance to public and private entities and institutions have a clear and comprehensive legislation that is modern, European-inspired;

2) internal control / management and financial aims to prevent, as much as possible, but not fully manifest irregularities and damages in managing material and financial resources of public institutions and private entities and is a filter very important in all systems control and use of public money or private.

3) In these control systems involving many people, both managerial and with financial, that only through continuous training and a lot of responsibility, can fulfil the condition as best duties on these areas of great importance, all entities, where these forms of control are settled and widespread.

At the end of our paper, we want to make some proposals that we hope viable and applicable to the institutions concerned:

1) The heads of private and public entities with persons charged with the internal controls / management and financial (managers of the intermediate steps and basic accounting specialists and financial, civil servants and contract staff with control, auditors public and independent external, internal auditors and many others) is required to draw up manuals, guidelines and operational procedures (if not, if it's the beginning of their operation) or to revise existing ones, so that they are as appropriate concrete situations of each public or private entity, because they are tools really useful and easy to follow and respected in all the technical details of such controls;

2) To review the entire system of recruitment and training of staff involved in management and financial management in both public institutions and private entities for the purposes of selection, after the specific rules of the competition on posts, people-oriented management and control, which have training not only specialized but also managerial and financial; as a continuation of the idea previously expressed, it is appropriate to establish a calendar of training through various courses or training forms of shorter or longer duration (postgraduate, master, doctorate) persons already employed in managerial positions and financial control in the current public and private entities to acquire methodological and technical tools required for the performance of internal controls / high quality financial and management;

3) Establish, as a general rule in the future in higher education programs for undergraduate, master and doctoral as compulsory subjects to go on during these forms of training, internal control / management and financial, not only at faculties economically but and other specialties, because managers can get among people of any specialization;

4) The administration of public funds in military units, more economically, more efficiently and more effectively than hitherto and identify the best ways and means, within the control of management, to ensure flexibility and sustainability of military establishments to fulfil the full spectrum of missions in which they are engaged;

5) Focusing more energy on the efficiency of financial control by creating a new approach with great mobility, to ensure the identification operation projects, not meeting the requirements of legality and regularity, employment in the limits of the destination budget appropriations and commitment and performance of which would harm the public domain or public funds;

6) Increasing mobility in dealing with financial control management control units within the military by creating an echelon to coordinate activities, from strategic level, through the Force and translating it into a unitary, at the tactical level;

7) The efficiency of financial control based information technology modernization and management control by creating microstructures management and execution flexible, high responsiveness, able to act in any circumstances, according to the tasks entrusted;

8) To achieve the objectives set by each military unit, financial control must meet stronger following requirements: to identify risks that may occur in the military establishments; creating an integrated financial control by upgrading the existing one; an efficient management of information and focus on the requirements of the initial and final efficient use of assets;

9) The very great importance for the future and the governing bodies and execution of microstructures financial military units and harmonization of duties on line management control to meet successfully the fundamental objectives of national defence and the basic mission every entity that has military side;

10) It is necessary to develop the idea, that financial control in the management control should be reconsidered, both in legislative, structural and procedural, in close connection with the trends of modernization manifested in the economic environment nationally and internationally, in the member states North Atlantic Treaty Organization (NATO) and of those in the European Union (EU).

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LESSONS LEARNED FROM A MISSION OF ENSURING MULTINATIONAL RESOURCES

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Abstract: *The resources or the logistic support is a crucial part of military operations in the today paradigm. As part of a progressive security environment, it is necessary to identify and transform the network - centric logistic capability. We can affirm that a wide range of solutions including closed monitoring systems and support methods in the theatres of operation, can be delivered by the previous missions, namely by the lessons learned.*

These solutions offer advanced answers based on service-oriented equations and provide an innovative response to the requirements of logistics units in terms of joint forces integration, cooperation and interoperability.

In addition, the solutions delivered by the lessons learned in previous operations incorporate sophisticated components and algorithms developed both the hard way by finding the support issues and the easy way by applying the logistic operation procedures.

The range of tools provided by the lessons learned concerning the resources of a multinational mission cannot be replaced in the same way by different methods and also provide easy access to a wide range of logistic answers centred on operational processes.

Keywords: *resources, logistic, solutions, learned lessons.*

Introduction

The increasingly complex threats manifested on international level, which affect the security policy of each state, issued from some entities that are often in shadow and the recruitment and training base of its militants, are located at great distance from the place of attack. This indicates that global peace is dependent on international events, while exceeding the scope of control of a single country or a single international body with responsibilities in maintaining peace and security.

Taking into account that the lessons learned after the participation in the theatres of operations invalidate some procedures or impose essential corrections of standard practices of action, the transformation of military technologies exceeds in most cases doctrinal innovations.

In the current security environment characterized by rapid change, it is vital to have the capacity to identify and rapidly implement the new lessons learned.

The importance of logistic lessons learned in military theatres

In this context, achieving harmony between the reality of the theatre of operations and the needs of training represents the capacity and the force of a modern armed force to be aware and prepared for any challenge arising in the operational environment; this process could be achieved through „lessons learned”¹.

This complex process needs the addition of experience to existing knowledge, namely the systematization and preservation of viable practices and the permanent remedy of dysfunctions. Identifying ways of solving issues depended on their actual logistic support

¹ http://www.revista.forter.ro/2010_1_t/03-to/03.htm, accesss in 20.10.2016, on 10.00.

(maintenance, transport, feeding, and equipment).

Providing resources and logistical support is a crucial component of current operations paradigm. As part of progressive security environment, it is imperative to identify and transform the capabilities in a network – the logistics centric one.

We can say that a wide range of solutions, including closed circuit monitoring systems and supporting methods in theatres, can be provided by previous missions especially by lessons learned from these operations.

These solutions provide advanced responses based on equations orientation support and support services, and also offer innovative answers to the logistic unit's requirements of the joint forces in the theatres of operations. These solutions must be in complete harmony and interoperability with all the material in the theatre.

Moreover, the logistic lessons learned from actual experiences in operating environment should be emphasized by capitalizing all those lessons drawn from previous experience.

The lessons learned at the logistical level include several new elements presented throughout the process of resource provision, as follows:

- the logistical manifestation of the supply chain ecosystem, namely, their continuous change into an ecosystem characterized by an accumulation of elements in a well determined chain gear, without dispersed elements, but allowing their visibility and agility. At the same time the logistic elements of in this context are interconnected and co-dependent on each other;

- the expansive feature of logistical chains - instead of focusing towards the inside, they are developing; this being determined by the growing needs of logistical support manifested in the current operation theatres. This cross-functional approach to managing processes and synchronizes integrates products, services and process type applications and logistical supply networks;

- the supply chains type like "end-to-end" - manifested by a higher connectivity providing both the information and equipment needed in a fluent thus linking supply with demand in a direct way. In this way the components logistics theatres are able to respond more quickly to changes of logistical request support from the inevitable disturbance absorbing operational environment;

- the exponential characteristic manifested by the network effect represents the ability to do multiple tasks with multiple logistic elements dispersed into many areas of action and responsibility.

The practice of lessons learned unmistakably lead to a transformation of the logistics system; this should be seen as a continuous process of development and integration of innovative concepts in order to increase efficiency and interoperability of forces in theatre to ensure support on the optimum level.

The first weapon in an armed confrontation is the mental state of fighters and the second one is the availability of the logistics resource, these things being important in all armed confrontations so far.

Lessons learned, in terms of logistics in theatres capacitate, point out a multitude of problems that can intervene in the execution of this scale. Hence, the capacity of a whole army to capitalize on this "know-how" and to put into practice the lessons learned is important in a new security environment for logistical dimensions of the operational environment.

Over the years, it took more time and several strategies, which were then abandoned as the operational component recognizes logistics capacity and the lessons learned from the exercises.

Most lessons in terms of logistics were used after the execution of operations or large-scale military operations, outstanding logistics being thus conducted without facilities. Logistic experiences have spanned all levels of operations, from strategic to the tactical, involving all three elements of a logistics system operational supplies, support and maintenance.

Any well-informed commander will confirm the theory that the exceptional strategy is as good as its execution. The battle plans that seem perfect in theory can be removed in a catastrophic battlefield by the rupture of one tier of the supply chain or logistic component. Lately, modern armies have made a strategic change in major terms of speed of deployment and action to combat units detrimental to sea these units. This element has a great impact on the logistics component placing the extra pressure on it. Also, supply chains may be able to draw some lessons from the optimal speed to support of ongoing operations.

Throughout Iraqi Freedom operation, it was proved that the supply chain, its sustainability and cooperation between logistics management and end user (combat units) are vital to the success of a mission. In this multinational operation, the challenge was to create a superior inter-operational and integration of the various armed forces deployed in the same operational theatre.

To facilitate and make more reliable the communication between the various branches of the armed forces deployed in Iraqi Freedom, it was created a single logistics component for providing the necessary resources. Thus, all ground forces (infantry, Marines, and other members of military coalition) have plugged in a single integrated network of distribution of material resources and support to combat operations. This logistic component had to be articulated on the specific needs of each branch of the armed forces considering the fact that the structures of logistics provided around 87% of the entire inventory of materials needed. Producers and distributors from the private sector were intertwined with elements of movement, military transportation logistics and their flexibility had a decisive impact in conducting warfare.

Also in this framework, the financial insurance contracts were concluded with suppliers of flexible collaboration complex weapon systems (aircraft and F18 Joint Surveillance Target Attack Radar System,, JSTARS "), which in addition to the purchase price required very high maintenance and reconfiguration.

In the same context, the purpose of military logistics was to split the payments into several instalments subject to overall availability of the system based on the concept "power by the hour", the logistic support advancing and changing from hour to hour of course supported by tailored financial commitments in this respect. Also in this concept, the need to reduce downtime can be achieved through the availability of superior operational and logistic elements military contractors under conventional support.

Over the previous operations of Iraqi Freedom operation, military leaders learned a painful lesson. Logisticians requested within 60 days from receipt of order to launch and support materials needed for real a massive attack. It was found that the logistic component can move a large amount of material but could not accurately identify the contents of the containers once they were in transit or at destination. The inevitable result was the breaking of transit links and nodes of the supply chain.



(Source - Nate Rawlings, Retrograde Lessons: Learning from Afghanistan's Logistical Nightmare)

Finally, in case of Iraqi Freedom, material and equipment of 40,000 containers, almost half of the supplies sent to the operational theatre, were never used.

A similar situation happened in the African theatre of the WWII, when a large amount of material and equipment worth hundreds of millions of dollars was ordered and delivered to the United States directly, while at the same time, they were available from a place that was much closer to Western Europe. Due to this situation, the American cataloguing agency was founded at the end of the WWII to create the product "Federal Stock Number (NSF)", which was later followed by NATO.

These experiences highlight a truth that logisticians know very well the inventory of stocked material and military equipment, which does not get where it is needed; it has no value, but is a waste of resources. Supply chain efficiency and inventory training aids it serves, is that at any moment know exactly the status and location of a given material, even if it is on a list for application in transit or in theatre. In this way, they can effectively manage the flow of materials, requests for materials and equipment to be provided.

This changing operational framework is a challenge for logistics units, and the battleground is shifting its degree of predictability. In this case, the solution is its ability to combine the predictability of logistical component operational environment and the size of inventories of materials that provide a consolidated and seamless logistics support.

In the same order of ideas, in the operation Iraqi Freedom, real logistic support was delivered at the appropriate time where needed, such as avoided the situation in which the operation Desert Storm, they delivered numerous amounts of equipment and supplies were unused in that way bargain the concept "iron mountain". At the same time we conclude in this case that it is necessary to upper management is required to manage the flow of materials proper inventory of materials.

In this operation the most problematic logistic issue, as well as all current military operations, was to keep up with the speed of movement of combat forces, as stated by Gl. bg. Jack C. Stultz, Jr. „It was not so much being able to supply them but to locate where they were moving to”².

² <https://hbr.org/2003/11/speed-kills-supply-chain-lessons-from-the-war-in-iraq>, accessed at 10.01.2017, on 13.00.



(Source: <https://hbr.org/2003/11/speed-kills-supply-chain-lessons-from-the-war-in-iraq>)

As for whom has met this challenge with a combination of technologies, in this case, each combat unit was equipped with equipment called transponder, which provides commanders and logistic units, accurate data about the location of combat units in real time. There were also attached to containers of materials, locating systems based on radio frequency (RFID), which also provides the exact identification of the globe where the materials to be delivered.

All these data, logistics systems and tracking systems were integrated into a network, allowing coalition to achieve supremacy in the theatre by gaining real-time accurate data, both operational and logistical support.

Following lessons learned from this operation, efforts were made to increase the efficiency and agility of resource provision of a multinational operation. Also, it was established that support should achieve the „end-to-end" type of combat units, superior integration and operational logistics information systems and maintenance management throughout the lifecycle of the equipment. Increasing the ability to effectively manage the logistics component led to the fulfilment of the mission success and led to the concept of “speed kills the enemy”³.

On the other hand, the time was theorized heavily on operational issues and military structure, but if we ask logisticians, they would say “Amateurs talk tactics, but professionals talk logistics”⁴.

In the same architecture, lessons learned can be drawn from operations in Afghanistan, where due to the very difficult and long distances between combat units and logistic bases, it was necessary to resort to expeditionary logistics strategies such as parachuting from tanks and spare parts to „speedballs", containers filled with food, water and ammunition parachuted above troops under enemy fire.

Also in this mission was underlined the importance of logistic units of retrograde type from the coalition, which had the task of repatriation and redistribution of very expensive equipment to other theatres, while those of lesser value and importance that have a great cost repatriation should be destroyed or handed over to local forces or allies. However, all these retrograde units identified containers that were abandoned on the supply flow or in theatre that had a \$ 1,500 cost of repatriation, but had inside parts of equipment worth between \$ 20,000 and \$ 200,000. These retrograde units applied the same scale logistical requirements such as capacity and speed of transport of materials.

³ <https://hbr.org/2003/11/speed-kills-supply-chain-lessons-from-the-war-in-iraq>, accessed at 10.01.2017, 13.00.

⁴ Gen. Robert H. Barrow, USMC (Commandant of the Marine Corps) noted in 1980.

CONCLUSIONS

Lessons learned are an important element in the transformation of the Romanian army and in its interoperability and standardization with their counterparts in NATO.

The value and importance of a logistical lesson learned were determined by high requirements in terms of improvement, training, leadership forces engaged in a theatre of operations.

In addition, solutions could be delivered by incorporating learned lessons from previous operations components and sophisticated algorithms that can develop both the hard way by finding immediately solutions to the logistical problem or the easy way through logistics operating procedures.

The variety of tools offered by lessons learned in terms of providing resources to multinational missions cannot be replaced in the same way by different methods and may provide easy access to a multitude of logistics processes.

„There are no failures, only lessons learned because everything was happening at once, cannot happen again. But everything that happens twice will surely happen a third time”⁵.

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⁵ PAULO COELHO *Alchimistul (ALQUIMISTA)*, 1988, p. 23.

MILITARY EDUCATION AND TRAINING DURING 1859 - 1865

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Abstract: *In the collective consciousness, the name of Alexandru Ioan Cuza is related to the Unification of the Romanian Principalities, Moldova and Wallachia, and the foundation of the modern Romanian state. The reign of Alexandru Ioan Cuza influenced two areas fundamental to any nation becoming: education and defence. Thus the Law of Public Instruction (1864) reformed the entire Romanian education system and the Armed Forces Organization Act (1864) established a modern army well trained and equipped.*

Keywords: *education, education, training, military.*

The archaeological evidence demonstrates the existence of weapons across the country since the ancient period. By using throwing stones devices such as catapults the Dacians and Romans improved the quantity and quality of weapons. Fighting skills were perfected by adopting effective tactical manoeuvres: attack on the flank and rear, envelopment etc. The first military technical schools were established in the guild workshops which produced weapons (swords, bows, arrows) and military training to conduct effective form of exercises organized.

In the 14th century, there were battles for the establishment of feudal states Wallachia and Moldova thus demonstrated the existence of trained armies south of the Carpathians. So we talk implicitly about the existence of forms of military education.

Ștefan cel Mare, Mihai Viteazul, Ioan Vodă were all military talents who improved the Romanian military art. They instructed the army commanders during inspections and exercises. Another form of training was represented by stages at the allied courts.¹

Regardless of age for military training there were forms of training.

In September 1829 it was signed the Peace Treaty of Adrianople, following the end of Russian-Turkish war. Moldova and Wallachia were not under Ottoman rule and reconfirmed reigns and complete administrative autonomy. With the establishment of native armies, it was felt the need for some form of organized military education. If officers were selected from among young noble families and benefiting from general education that enabled them to acquire military knowledge by practical training, it was more difficult in the case of inferior ranks because of illiteracy. In the border regiments were established "teaching orders" - forms of general education not military education.

Nicolae Bălcescu tried to substantiate the necessity and theoretical bases for the military education: it is necessary "especially the establishment of a special soldierly school in which to train officers for both the three weapons and a corps of engineers (...). This school would need small investment compared to than the wonderful benefits that could bring".²

Prince Gheorghe Bibescu, by royal decree no. 36 of June 13, 1847 obliged the "Chief of the Army" to set up soldierly school the first Military School.³

The reforms during the reign of Alexandru Ioan Cuza were aimed at organizing and strengthening the military. Advised by Mihail Kogălniceanu, General Ion Emanoil Florescu

¹ Colonel Foçșeneanu, M, în *Istoria învățământului din România - Compendiu*, București, Editura Didactică și Pedagogică, 1971.

² Bălcescu, N. *Scrisori militare alese*, București, Editura Militară, 1957.

³ ***, *Contribuții la istoria învățământului militar din România*, București, Editura Militară, 1972.

and General Savel Manu, the ruler provided a comprehensive legislative framework for the modernization of the new army.

The principle of armed nation was established by the Law on Organization of the Armed Forces - in November 1864. Compulsory military service for a period of four years in operation and two years in reserve for any citizen was introduced by the Law of Recruitment - December 1864. The recognition and improvement of the military status were regulated by a series of laws concerning military hierarchy, officers' position, payment regulation.

Regarding military education in 1860 the law was passed for instruction, exercise and discipline in the Unified Romanian Principalities Army. They provide the basis of a system of military education based on doctrinal principles that harmoniously combine the national tradition with the experience in other countries, especially in France. Romanian officers were sent to study in military schools or to train courses in foreign armies to acquire the experience gained by those armies in terms of command of troops and combat actions. The knowledge and experience exploited in training the Romanian army.

In order to train and prepare the military were established some of military educational institutions as follows:

1. Military School - officer training;
2. School of Fencing and gymnastics;
3. School of Arts and Crafts;
4. Schools of First Degree.

1. Military School

Military School was founded by reorganizing Soldierly School and was aimed at preparing the officers belonging to all branches being "subject to military rule ... under the orders of the Minister of War."⁴ The courses had duration of five years, the first three years as general training. The next two years, training was differentiated: cavalry, infantry and special education (engineering and artillery).

The Regulation of Military School, Title I established: number of students ("The number of students must be 70, but this figure will vary, it may increase or decrease according to the need in the army"⁵) study regime (tuition, scholarships and partial scholarships"... 52 are kept in school by their parents' expense, and out of the other 18, six are state scholarships and 12 partial scholarships"⁶) and the fee ("fee per student remains fixed at 18 coins per semester, payable in advanced"⁷).

The articles relating to the organization of school treat management and education separately.

Quality of education is given greater importance:

i. Trainers (teachers) can only fill job following competition "before a commission appointed by the Minister, composed of officers and school teachers suggested by the school principal"⁸;

ii. Instructors and tutors officers were appointed by the Minister "following a competition" and should "served at least three years front"⁹;

iii. Courses curricula development shall be established and reviewed, "capitalising on the lessons learned from experience"¹⁰, by the Education Board. To meet the goals, the same Board has the responsibility to choose "books, cards and instruments for student work"¹¹;

iv. Quarterly evaluation was "severe and fairness" through the scoring system 0-20 appreciation associated classified bad - mediocre - pretty good - good - too good. The correlation note - assessment was made in the Education Board. Quarterly results of the examinations were reported by the school principal to the Ministry of War. To continue

⁴ Regulamentul Şcolii militare din Bucureşti publicat în Monitorul Oastei, nr. 14 din 26 februarie 1862

⁵ *Ibidem.*

⁶ *Ibidem.*

⁷ *Ibidem.*

⁸ *Ibidem.*

⁹ *Ibidem.*

¹⁰ *Ibidem.*

¹¹ *Ibidem.*

school or to graduate, it was absolutely necessary to obtain the minimum qualification "pretty good".

The contents were established according to the requirements and the training of the students when entering the school. The subjects aimed at both general education and military specialties. Students studied: Romanian, two foreign European languages (French and German), mathematics (algebra, arithmetic, geometry), calligraphy, drawing, topographical drawing, descriptive geometry, architecture, bridges and roads, fortifications, tactics and strategy, administration and legislation. These contents support the idea of mandatory knowledge of the future officer they could apply and develop in unity.

The results of students following quarterly assessments were the basis of advances and classification within the promotion. Moreover, the school was very drastic Regulation regarding the interest of students to study (those who did not obtain the expected results were expelled) and severely punish any misconduct or conduct that could harm military status.

The high level of preparedness of graduates is supported by big names who remained in the history of the Romanian army generals-academicians Emilian Boteanu, Ștefan Falcoianu Dona Nicolae, Constantin Barozzi and others.

The Medical Service General Inspectorate, led by Colonel Carol Davila, developed curriculum based on which was founded in 1861 the School of Medicine. Graduates of this school were treated as second lieutenant and sent to regiments, having the obligation to serve in civilian hospitals. Because they could not meet the need for military medical personnel with higher education, Colonel Davila argued that military medical training should be undertaken abroad. Health workers with secondary education required army further prepared in the School of Medicine.

2. School of Fencing and Gymnastics

The purpose of establishing this school was to prepare trainers able to conduct training programs for development the physical qualities of the military. The academic period was one year.

The graduates of this school were fencing instructors, but must be able to lead a gymnastics program. The presence of these units led to improve the physical training of military personnel.

In 1863 it was developed and approved a regulation on physical training which requires that NCOs and officers, regardless of rank, to be able to conduct methodical training with NCOs, which in turn could conduct physical training sessions with soldiers .

The School of Fencing and Gymnastics worked only five years, but prepared cadres for conducting physical training programs within the units.

3. School of Arts and Crafts

The new Armed Forces of the Unified Romanian Principalities had to be equipped which required training military personnel with secondary education to ensure their maintenance.

The School of Arts and Crafts was founded in 1863 by taking over by the Ministry of War of the school of arts under the tutelage of the Ministry of Public Works. The courses were held during the six years covering equally theoretical and practical training both in military and in civilian workshops.

Students were qualified as: turners, blacksmiths, wheelwrights, pyrotechnics technicians, cast in bronze, cast iron and brass, chemist technicians. After graduation, being thus qualified, they conducted a year internship then presented to a master craftsman examination.

The teacher's board consisted of a teacher for the upper class, an instructor for drawing, a manufacturer for models, a blacksmith and a lathe.

The school opened its doors in autumn 1863 the military budget reduction imposed closure after only one year of operation. Some of the students enrolled were sent to units, and others attended the entrance examinations for the Military School and School of Medicine and Pharmacy.

4. First degree schools

By order no. 62 of March 30, 1860, Alexandru Ioan Cuza ordered setting up First Degree School within each unit. These schools were being updated Lancastrian schools¹², for the lower ranks, *had to teach them to read, write, perform the 4 arithmetic operations*¹³. Each school had four classes of 24 students each.

The school was subordinate to the master unit. The school principal weekly reported the students' performance, in writing. At the end of the semester, the school situation was reported to the Ministry of War.

Trough the reforms initiated regarding military organization and military education system, Alexandru Ioan Cuza was proven to be a visionary. Based on tradition and incorporating the advances science and military art of the time, he built a military education system competitive and consistent, able to meet the real needs of the army.

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¹² Lancasterian education system is the system of education in which the most advanced students were used as monitors. The system was founded by Joseph Lancaster and was successful in the first decade of the nineteenth century

¹³ Bălcescu, N, *Opere*, București, Editura Academiei R.P.R., 1953

THE EFFICIENCY OF THE ROMANIAN CRIMINAL CODE IN FIGHTING CYBER-ATTACKS

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Abstract: *The phenomenon of cybercrime is becoming more hostile and combative as organized criminal groups take advantage of new criminal opportunities from the virtual environment, motivated by profit. Most of criminal opportunities come from a very large number of software vulnerabilities and evolving threats. The fight against cyber-attacks can be successful if there is a holistically approach, based on five pillars: legal measures, technical and procedural measures, organizational structures, capacity building, and international cooperation. This paper focuses on the role of legislation in preventing and combating the cybercrime phenomenon. Legal measures are needed in all the fields, including investigative measures, procedural powers, jurisdiction, and international cooperation.*

Keywords: *cybercrime, cyber-attack, criminal code, multilateral instruments.*

Introduction

The phenomenon of cybercrime is a becoming more hostile and combative as organized criminal groups take advantage of new criminal opportunities from the virtual environment, motivated by profit. Most of criminal opportunities come from a very large number of software vulnerabilities and evolving threats. A big concern is represented by botnets, malware, ransomware, phishing attacks, and many advanced tools and services from the Darknet.

Considering that cybercrime proceeds are more and more profitable, the constant development of new attacking methods and tools makes these crimes increasingly sophisticated. All the developments in the cyber domain will require changes in law enforcement approach, evidence gathering, and mechanisms of international cooperation.

The fight against cybercrime can be successful if there is a holistically approach¹, based on five pillars: legal measures, technical and procedural measures, organizational structures, capacity building, and international cooperation².

The role of legislation in preventing and combating the cyber-attacks is very important. Legal measures are needed in all the fields, including investigative measures, procedural powers, jurisdiction, and international cooperation.

The role of legislation in fighting cybercrime

Legal measures have an important role in the prevention and combating of cybercrime. The law represents a tool for the state to respond to security challenges, as a balance between

¹ Vasii Ioana, Vasii L., *The Cybercrime Challenge: Does the Romanian Legislation Answer Adequately?*, Law Review, vol. III, issue 2, 2013, pp. 42-51.

² Gercke M., *Understanding Cybercrime: A guide for developing countries*, 2011.

the respect of privacy and the control of crime. In addition to national laws, the law of nations covers relations between states, so provisions in both national and international law are relevant to cybercrime acts³.

Due to the technological developments in the field of cybercrime, the legislation has to seize with new concepts and strategies. In many countries, the law on technical developments are focused on computer systems and not on the particularities of information technology that can be associated with cybercrime. Computers can be attributed to certain owners, while the attribution of information is more challenging.

The role of cybercrime legislation is to discourage the perpetrators and to protect the citizens. It sets clear standards for the use of computer devices, enable law force investigations, protect individual privacy, provide effective criminal justice procedures and enable cooperation between countries in the cybercrime field.

Harmonization of cybercrime laws

In a globalized world, the law consists of a collection of national and international legal systems. Sometimes provisions can contradict each other, resulting to collisions of law, because of the interactions between these legal systems.⁴ The main goal of the international law is to obtain harmonization of national laws.

Cybercrime is a form of crime that involve multiple jurisdictions and laws, it can engage legal jurisdiction in a very short timeframe.⁵ Different perspective on the acceptability of forms of the content offer a certain number of alternatives. Such differences point to the need of harmonization of laws. The basics of harmonization can be a single national approach, some frequent legal elements identified in the law of different countries or revealed in a multilateral instrument, like a treaty or non-binding international standard. The level of harmonization of cybercrime laws varies depending upon the countries cooperation, the region and the multilateral instruments.

Cybercrime represents a global problem and the cooperation in this field is essential on the basis that cyber-attacks don't have boundaries. The advantages of harmonizing the law are for the prevention of safe places for perpetrators and for global evidence collection. While not all the mutual legal agreements between states include requirements for interviewing the witnesses or collection of evidence, many instruments ensure measures like search and seizure or freezing of the property.

Multilateral instruments in the field of cyber-attacks

In the last decade many significant developments were made for the promulgation of multilateral instruments in the field of cyber-attacks. There are five of collections of regional and international instruments developed in the context of the Council of Europe or the European Union, the Commonwealth of Independent States or the Shanghai Cooperation Organization, the African context, the League of Arab States, and under the auspices of United Nations entities.

An important difference between instruments is given by the legally binding character. Some instruments represent agreements between states that planned to create legal obligations and other instruments are designed to represent models for development of national legislative provisions. Non-binding instruments may have an important influence when many countries choose to align their national legislation with model approaches.⁶

³ United Nations Office on Drugs and Crime, *Comprehensive Study on Cybercrime*, 2013.

⁴ Sieber U., *Legal Order in a Global World*, Max Planck Yearbook of United Nations Law, 14, pp. 1-49, 2010.

⁵ Sieber U., *Mastering Complexity in the Global Cyberspace*, pp.127-202, 2008.

⁶ United Nations Office on Drugs and Crime, *Comprehensive Study on Cybercrime*, 2013.

Most of mechanisms of international cooperation are relevant to binding multilateral instruments because they provide clear international obligation and power for cooperation. The aspect how multilateral instruments are implemented in national law and the application and administration of the new rules can represent the critical factors in the success of legislation harmonization.⁷ The objective of implementation is to provide a certain level of consent of national legislation with international frameworks.

The fusion of cybercrime regional and international instruments into national law can involve amendment of legislation like the criminal code and criminal procedure code in order to propose new specialized crimes or to modify existing ones.⁸ That's why the results in national law can be somewhat different from state to state.

The success of harmonization and application of international law into national legislation is decided by the level to which states are able to convert international standards into national systems.⁹ The adoption of both binding and non-binding multilateral instruments represents an evolution to harmonization of national laws and increase international cooperation against an international threat.

Modernization of Romanian legislation on cybercrime

Romanian legislation on cybercrime is provided in the Criminal Code and in Law no. 161/2003, specifically in the third title – *Preventing and combating cybercrime*. The New Criminal Code is a very useful tool in the hands of law enforcement agencies involved in combating cybercrimes.

The changes made to the previous legislation are opportune considering the real need of indictment outlined by the analysis of the judicial practice, while the new concerns are important in the process of creation of the modern legal framework, capable of defending the new social values what will come from the interaction of people with a growing information technology¹⁰.

One important aspect of the Romanian legislation on cybercrime is that it is adapted to the provisions of cybercrime at the level of the European Union under the aspect of the used terminology. For example, the terms of *information system* and *computer data* are defined in Article 181 of the Criminal Code. *Information system* is represented by “any device or set of devices interconnected or in functional relation, of which one or more ensure the automatic processing of data, with the help of an information program” and *computer data* is represented by „any representation of acts, information or concepts in a form which may be processed through an information system”.

Analysis of the Romanian legislation on cybercrime

Offences committed in virtual environment are specified in the Criminal Code in Chapter IV of Title II, to the offences against the patrimony were added the frauds committed through information systems and electronic means of payment (*Articles 249-252*).

In Article 249 of the Criminal Code the offence of computer-related fraud is described as the act of causing a prejudice to a person by input, alteration or deletion of computer data, by restricting the access to computer data or by any interference with the functioning of a

⁷ Miquelon-Weismann M.F., *The Convention on Cybercrime: A Harmonized Implementation of International Penal Law: What Prospects for Procedural Due Process*, 23(2), pp. 329-61, 2005.

⁸ Klip A., *European Integration and Harmonisation and Criminal Law*, (4), pp. 111-124, 2006.

⁹ United Nations Office on Drugs and Crime, *Comprehensive Study on Cybercrime*, 2013.

¹⁰ Dobrinou M., *Considerations on the Efficiency of the Romanian New Criminal Code in Combatting Cybercrime*, International Conference Challenges of the Knowledge Society, 2013.

computer system, in order to obtain a benefit¹¹. The text was adapted to the provisions of Article 8 of the Convention of the European Council on Cybercrime.

In Article 250 of the Criminal Code there are described the operations of cash withdrawal, uploading and downloading of an instrument of digital currency or transferring of funds, without the consent of the holder. The offence of carrying out financial operations fraudulently is part of the category of offences against patrimony which is based on fraud¹².

In Article 251 of the Criminal Code it is stipulated the offence of acceptance of financial operations carried out fraudulently, which transposed the provisions of Article 2 of the Council Framework Decision 2001/413/JAI of 28 May 2001. In Article 252 of the Criminal Code, the legislator opted for the criminalization of the attempt at all the offences¹³.

The provisions of Article 311 of the Criminal Code present a variant of forgery of debt securities or payment instruments, specifically when the targets are electronic payment instrument. According to Article 313 of the Criminal Code, it represents an offence of putting into circulation falsified electronic payment instruments only when the material object of the offence is constituted by the falsified instruments.

In Article 314 of Criminal Code is regulated the offence to possess instruments in order to falsify electronic payment instruments. In this article the act of possession is criminalized, together with the actions of making, receiving and transmitting hardware or software tools, in order to falsify electronic payment instruments.

The offences of forgery are stipulated in Article 325 of the Criminal Code, like the operation of input, alter, delete or restrict any computer data without right, resulting data not compliant with truth, in order to be used to produce a legal consequence.

The Article 360 of Criminal Code includes offences against safety and integrity of information systems and computer data. The offence of illegal access to an information system is presented in a simple form, which prohibits the access without right to a computer system and two aggravating variants. The access represents any successful interaction with any computer system, entering the whole or just a part of the information system¹⁴. The illegal access of information system may be directly, by the person in front of the information system, but it may be also indirectly, by using different proxies, through computer networks.

In Article 361 of the Criminal Code the illegal interception is described, as a transposition of Article 3 of the Council of Europe Convention on Cybercrime, with the difference that it doesn't stipulate the technical means of the interception. Article 362 of the Criminal Code presents the alteration of integrity of computer data. The Romanian criminal law does not specify as alternative modalities the destruction or suppression of computer data like in the text of the Council of Europe Convention on Cybercrime, but it introduces a new method of committing an offence – the restriction of access to computer data¹⁵. The offence of hindering of the functioning of computer systems is stipulated in Article 363 of the Criminal Code and intends to protect computer data against attacks of computer piracy or other malicious activities. The provisions of this article are also inspired from the provisions of Article 5 of the Council of Europe Convention on Cybercrime. The Article 364 of the Criminal Code stipulates the unauthorized transfer of computer data.

The Article 365 of the Criminal Code includes illegal operations with computer devices or programs representing the act of the person that make, or distribute without right,

¹¹ Moise A.C., *Modernization of Romanian Legislation on Preventing and Combating Cybercrime and Implementation Gap at European Level*, Political Science Journal, issue 45, 2015.

¹² Sauca M., *Crimes on electronic commerce*, Mirton Publishing House, 2005.

¹³ Moise A.C., *Modernization of Romanian Legislation on Preventing and Combating Cybercrime and Implementation Gap at European Level*, Political Science Journal, issue 45, 2015.

¹⁴ Spiridon I.C., *Reflections on Romanian cybercrime legislation*, Law Journal, issue 6, 2008.

¹⁵ Moise A.C., *Modernization of Romanian Legislation on Preventing and Combating Cybercrime and Implementation Gap at European Level*, Political Science Journal, issue 45, 2015.

any form of computer programs, passwords or any access codes that allow total or partial access to a computer system, in order to commit one of the offences referred to in Articles 360-364.

The offence of child pornography is included in Article 374 of the Criminal Code, stipulating that producing, possessing, promoting, distributing, as well as making available, in any way, pornographic materials with minors. Increased danger of acts of child pornography and the necessity to ensure a protection of social relations determined the legislator to establish a special regime of sanctioning of these infringements¹⁶.

The efficiency of the Romanian Criminal Code

The Romanian legislation on cybercrime adapted to the provisions of the most important legal instruments on fighting cybercrime at the European Union, such as the Council of Europe Convention on Cybercrime, Directive 2013/40/UE of the European Parliament and of the Council on cyber-attacks against information systems and Council Framework Decision 2001/413/JAI on combating fraud and counterfeiting of non-cash means of payment¹⁷.

The Romanian Criminal Code groups in a natural way the computer-related crimes based on the traditional social values, introduces new concepts, reformulates relevant articles from the respective special laws, and modifies the quantum of the imprisonment time¹⁸.

Some of the new offences committed in cyberspace are not regulated in the Romanian criminal law legislation, but they could be criminalized by the following existent provisions: spam by the provisions of Article 325 and Article 363 of the Criminal Code; phishing by the provisions of Article 249 of the Criminal Code; data theft by the provisions of Article 325 and Article 364 of the Criminal Code, cyberstalking by the provisions of Article 208 of the Criminal Code; cyberbullying by the provisions of Article 208 of the Criminal Code and Distributed Denial of Service (DDOS) by the provisions of Article 362 of the Criminal Code¹⁹.

The modifications brought to the Romanian legislation are relevant to the actual need of incrimination, while the new aspects contribute to the formulation of a modern legal framework, able to protect the social values and to respect the principles of institution balance as regards police cooperation.

CONCLUSIONS

With an interconnected world, the cybercrime phenomenon will increase in the future. Cyber-attacks experienced a great diversification, some of them being classified as global epidemics spreading with high speed. All these cyber threats require changes in law enforcement approaches, evidence collecting, and mechanisms of international cooperation.

The diversity of national cybercrime laws and the discontinuity at the international level may correlate with the presence of various cybercrime instruments with different settings and geographic goal. The differences of cybercrime instruments, the discrepancy of procedural powers, and international cooperation provisions may determine the development

¹⁶ Neagu N., Dobrinoiu V., *Criminal law. The special part. Theory and practice*, Universul Juridic, 2011

¹⁷ Moise A.C., *Modernization of Romanian Legislation on Preventing and Combating Cybercrime and Implementation Gap at European Level*, Political Science Journal, issue 45, 2015.

¹⁸ Dobrinoiu M., *Considerations on the Efficiency of the Romanian New Criminal Code in Combatting Cybercrime*, International Conference Challenges of the Knowledge Society, 2013.

¹⁹ Moise A.C., *Modernization of Romanian Legislation on Preventing and Combating Cybercrime and Implementation Gap at European Level*, Political Science Journal, issue 45, 2015.

of countries cooperation groups that are not prepared for the international nature of cybercrime.

The differences of the national legal frameworks show insufficient harmonization of cybercrime offences, investigative powers, and eligibility of electronic evidence. The basics of harmonization can be a single national approach, some common legal elements identified in the law of different countries, or revealed within a multilateral instrument, like a treaty or non-binding international standard. The level of harmonization of cybercrime laws varies depending upon the countries cooperation, the region, and the multilateral instruments.

The increasing number of crimes that involve geographic distributed electronic evidence will become a problem for cybercrime investigations. Many cyber-attacks use proxy computers, cloud computing and data centres from different countries, so the character of the evidence location has to be reanalyzed, including the access to extraterritorial data by authorities.

Despite the complex cybercrime phenomenon, law enforcement demonstrated its competence in dealing with cybercrime many time. For preventing and combating the cybercrime phenomenon in the future, changes are required in law enforcement approaches, evidences gathering, and mechanisms of international cooperation. The modernization of legislation on cybercrime has to be done according to the principles of institutional balance regarding police cooperation. The key to a safer cyber environment is the international cooperation of the law enforcement with private sector and academia.

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APPROACHES OF DIGITAL ECONOMY AND ELECTRONIC COMMERCE

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Abstract: *The concept of „new economy” or digital economy appeared at the end of the 20th century triggered by the evolution of two tendencies in the global economy: globalization and the unprecedented dynamics of information and communication technology. This resulted in the so-called knowledge revolution, which marked the transition from resource-based economy to the knowledge-based one. The emergence of Web 2.0 stressed the transition as it fostered communication, cooperation, and socialization.*

These structural tendencies from the world economy indicated, according to some researchers, a new industrial revolution based on the progress in information and communication technology and having the capacity to shape the whole economic and social life of the 21st century.

Key words: *digital economy; the Internet; electronic commerce; new Technologies; digital communication channel; dimensions of electronic commerce.*

Digital Economy Aspects

The researchers of the economic transformations generated by the new technologies have formulated a number of definitions for the new economy, which have as a common thread the transformations generated by the accelerated use of the new technology in production and business. The differences came equally from the analyzed elements, from the different views on the new phenomena, and from the difficulty to encompass the contribution of each component of the new technology to the transformation underway in economy.

Remarks on Digital Economy

Digital economy is one that stresses the highly qualified work due to the revolution in Internet and information-based technology.

In digital economy, organizations become more and more competitive as they have access to the necessary information through the Internet, and so the market is no longer national, but international (as it is based on the Internet).

In the digital age, the economy influences people’s daily lives by offering new challenges and options regarding: electronic commerce, cards, intelligent traffic control systems, increasingly sophisticated mobile phones, remote connection to the Internet, online conferences and videoconferences, virtual images etc¹.

The researchers of the new technology have not tried to identify only the dimensions of this transformation, but the ways in which these (the new technologies) can be used for the economic growth.

¹ Mihai Rusoiaie, *Modele e-business în România*, Master of Business Administration - Executive, Universitatea “Politehnica”, Facultatea de Management în Producție și Transporturi Timisoara, 2008, p.10.

In digital economy, actors are and will be producers, merchants, middlemen, and consumers, which will communicate through electronic links while the basic unit of economy will become the firm/company that designs and pursues business.

In knowledge-based economy, the business environment becomes electronic because the organizations (profit and non-profit) are subjected to continuous adaptation to the pressure of external factors in order to stay on the market and online through competitive advantage.

Digital economy is a virtual one without physical boundaries. Here, virtual communities are based on common interests and not on geographical position. Digital economy stresses the lack of the intermediary. Now the furnishers get in touch directly with the customers as information travels directly and rapidly.

The diagram looks like integrating the Digital Economy in the Information Society (Figure 1)².

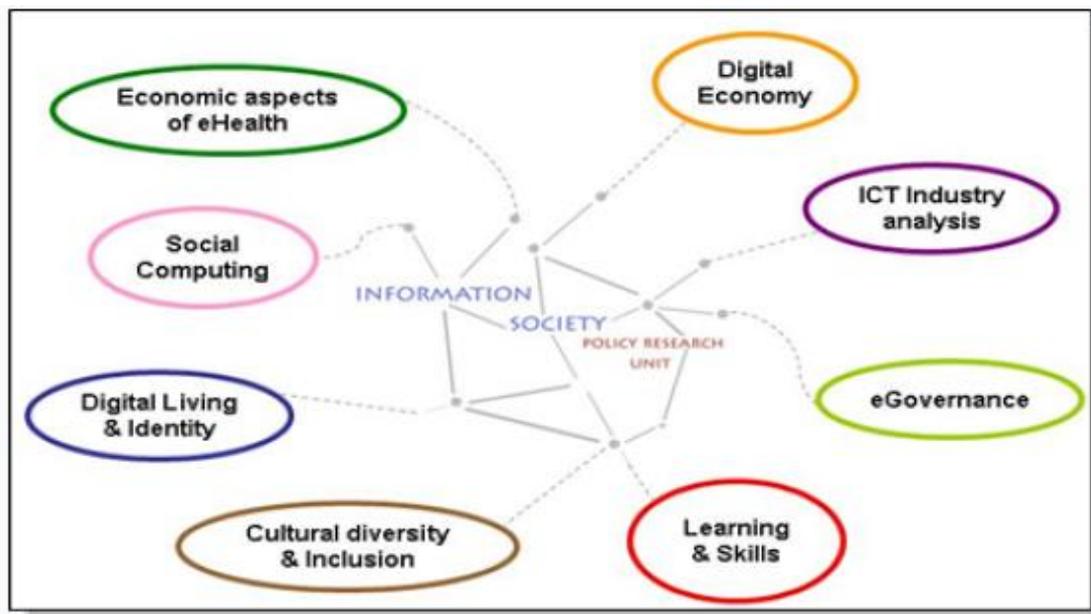


Figure 1. Integrating the Digital Economy in the Information Society

The old economy was based on physical products and their value was the sum of the components. Therefore, the product cost represented the manufacturing overhead, and the costs of design and research, which were relatively reduced.

In digital economy, the value of a product is given by the sum of its components (physical elements), the design, the brand and the technology used (intangible parts of the product).

The *main characteristics of digital economy* are as follows: the great majority of products are intangible, the repetitive work processes or those that require hard physical work have become automatic. The Internet fosters electronic transactions, so the physical presence of the two parts, seller and buyer, is no longer necessary. The information is accessed rapidly and at a low cost. This economy is based mostly on cooperation not control. The geographical position is no longer important. A person's position within a firm is less important, as the stress falls on the person, her knowledge, and her results.

The stress is now on patents and research papers as global economy is taken into account. New indicators to measure economy appear such as percentage of management and professional positions, the level of labour force education (the stress is on highly-qualified

² <http://is.jrc.ec.europa.eu/pages/documents/a1.pdf>

work), the percentage of adult population online. Statistical indicators regarding technology are also present: Internet broadband (Mbps), type of telecommunication devices that exist and the percentage of their use, the use of Internet by the manufacturers, the use of computers in schools, and the number commercial Internet domains. The economic development is now measured through the number of patents, value obtained from academic research, risk capital, and number of online transactions. Because of the Internet use, the transaction expenses decrease, performance increases, and new markets based on current technology emerge³.

According to Philip Kotler, considered the father of modern marketing, world economy is reconfigured because of numerous elements, among which the main important being: technology, globalization, ecology, economic crisis etc⁴.

Facilitating Business on the Internet

The British researcher Tim Berners-Lee, creator of World Wide Web (WWW - in 1989 at the European Particle Physics Laboratory of the European Organization for Nuclear Research in Geneva) defines the model of the world as a network in which information and data are linked together, giving the power that increases as a result of the combination of knowledge within the multitude of existing links⁵.

The „www”, in which the researcher Robert Caillan also participated, started from the wish to create a common space on the Internet, where users had the possibility to find and offer useful information. The initial purpose was to create a place where researchers could exchange information from the field of nuclear science⁶.

The Internet is not actually „www” even if someone might think that the two notions are identical. In reality, „www” refers to the total of websites that form together the „World Wide Web”⁷.

At the beginning, many specialists harboured the idea that the implementation of the Internet would make redundant the old rules of deepening and concretizing strategy and competitive advantage. To this end, Michael Porter, the renowned world specialist in the theory of competitive advantage, professor at Harvard Business School, stresses exactly the opposite of the abovementioned: „The only way to do so is by achieving a sustainable competitive advantage-by operating at a lower cost, by commanding a premium price, or by doing both”⁸.

Based on economic practice, specialists argue that with the use of the Internet, the business profit can decrease if firms do not become visible through their own strategy. It results that the Internet should be considered a complementary element by business people and not a way to give up the traditional methods of competition. In this respect, according to M. Porter, firms should not disturb their customers through different means (indirect income through advertising, taxes from hosting advertisement on the Internet, offers through distribution channels etc.) and should concentrate on quality, which triggers an attractive price for customers. In the same vein, Porter argues that „As all companies come to embrace Internet technology, moreover, the Internet itself will be neutralized as a source of advantage”⁹.

³ Marinela Mircea, *Managementul afacerilor în economia digitală*, Editura Economică, București, 2009, p.12.

⁴ Philip Kotler, Gary Armstrong, *Principiile marketingului*, Editura Teora, București, 2008, p. 773.

⁵ Peter Fisc, *Geniu în marketing*, Editura Meteor Press, București, 2008, p. 303.

⁶ *Cine a inventat World Wide Web*, *Hosty.RO*, 07.02.2011; <http://www.hosty.ro/blog/întrebări-frecvente/cine-a-inventat-world-wid-web/>

⁷ *Când spunem www, înseamnă internet?* <http://www.hosty.ro/blog/întrebări-frecvente/când-spunem-www-înseamnă-internet/>

⁸ John Middleton, *Op.cit.*, p. 15.

⁹ *Ibidem*.

According to John Middleton, the sources of strategic advantage in business resides as always in „cost competitiveness, product differentiation, ease of entering and exiting markets and so on.” The importance of the Internet is in the way in which it can positively influence these traditional procedures¹⁰. In this field, not everything is left at the free will of great performers. The new firms that appear on the market and rely on the Internet are more agile and innovative than giant companies. Therefore, the Internet creates equality between the dynamic newcomers and the large companies, an advantage which allows them to start from the same point.

The technology of the Internet offers advantages to customers and disadvantages to intermediaries. So, with the harsh competition of products and services on global markets, customers/users have the possibility to use the search engines on the Internet to identify the cheapest products in a short period of time (in a matter of seconds), while the new intermediaries called „informedians” have created a new forms of commerce, in which the buyer is the one who establishes the price in the distribution chain and not the seller¹¹.

The disadvantage of the Internet for intermediaries is given by the information technology which puts the producers in direct contact with their customers, which results in the bankruptcy of distribution chain and the removal of those who have earned their living by purchasing in bulk and selling by piece. Thus, „middleman functions between consumers and producers are being eliminated.”¹².

According to specialists, the Internet and the digital communication channels trigger new means to obtain profit. To this end, alliances and partnerships are created based on the Internet as „business networks” or „b-webs”. A *business network*, according to renowned economists¹³, is a „distinct system of suppliers, distributors, commerce service providers, infrastructure providers and customers that use the Internet for their primary business communications and transactions.” Such a business network based on alliances/partnerships has a main partner that manages and coordinates strategies and processes.

According to the American manager, Andy Grove “In some period of time, let's say five years, there won't be any Internet companies. There will be companies that use the Internet; all companies that will operate will use the Internet in their business operations, or they will be marginalized out of operations”¹⁴.

E-Commerce Determinations in the New Economy

E-commerce, which is simply defined as the conducting of commercial activities through electronic means, enhances these dominant features of the new economy. Operating almost exclusively on the global online environment of the Internet, electronic commerce has a number of features that distinguish it from traditional commercial activities. These include the blurring of national boundaries; the elimination of distance; no or minimal physical presence; the reduction of intermediaries (or disintermediation); the lack of physical regulatory control; and the potential for increased intra-firm integration and the capacity of firm to outsource non-core functions. These features do not eliminate traditional physical trade as such, but are complements to it. These features create potential new opportunities for all participants to the economy.

¹⁰ *Ibidem*, p. 16.

¹¹ *Ibidem*, p. 17.

¹² *Ibidem*, p. 19; apud: Don Tapscott, *The Digital Economy*.

¹³ *Ibidem*, apud: Tapscott, Ticcoll și Lowy, *Digital Capital*.

¹⁴ *Ibidem*, p. 79; apud: Andy Grove, *Only the Paranoid Survive: How to Exploit the Crisis Points that Challenge every Company and Career*, Harper Collins, 1996.

The Dimensions of Electronic Commerce

The “new economy“ concept came into being at the end of the XX century when the background of the world economy was shared between two tendencies: globalization and the unprecedented dynamic of information and communications; this moment launched the so called knowledge revolution and indicated the change from the economy based on the physical resources to that based on knowledge.

These new structural tendencies in the world economy foreshadow - according to some researchers - a new industrial revolution, based on the progress of the information and communication technology that has the power to fundamentally change the entire social and economic life in the XXI century.

The scientists (who have studied the economic changes generated by the new technologies) have come out with many definitions for the new economy; these definitions have in common the changes generated by the penetration and the accelerated employment of the new technologies in production activities and in businesses. The differences arise from the elements analysis, from the different interpretation of the new phenomena as well as from the difficulty in analysing the role each component of the new technology has in the economy changes¹⁵.

The new economy scientists aimed not only to identify the size of these changes but also how to use these technologies with a view to economic growth.

It is sure that the information and communication technology will become the engine of the economic and social changes in the future society; the information will become the main source and the Internet will be the most efficient communication and businesses network. It follows that the new economy will be the one based on businesses *through* the Internet.

The new technologies are able to fundamentally change all the economic activities and social environment. On a large scale they have already affected the communication and financial sectors and the en-detail sales (representing 30% of **GDP**); conditions for a rapid penetration in education, health system and public services have been created (they represent almost 20% of **GDP**)¹⁶.

The on-line customers want to follow instantaneously their order, the moment they press the delivery button to the moment the products are delivered; they also want to know the costs and the delivery time and to redirect the orders. Thus the power transfer from seller to buyer creates a “new waiting era“ and the buyers (individuals or firms) will not tolerate negative experiences any more; these negative experiences refer to incomplete packages of products, delivery delay or inadequate return policies. The dimensions of electronic commerce are shown in Figure 2.

¹⁵ Bayles Deborah, *E-commerce logistics and fulfillment: delivering the goods*, Prentice Hall, New York, 2001, p.25.

¹⁶ Daniel Micu, profesor de marketing la Bucharest School of Management/*Programul Canadian MBA.*, p.28.

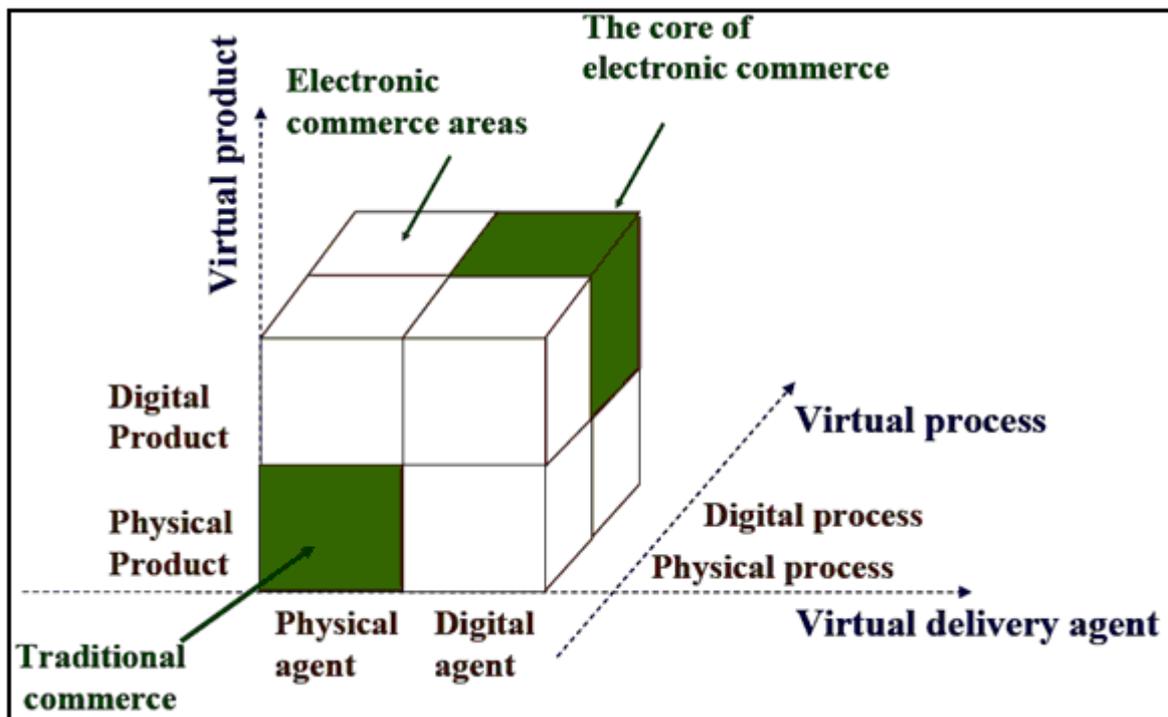


Figure 2. The Dimensions of Electronic Commerce¹⁷

Thus, e-commerce development imposes a fundamental change of the traditional logistics that has to be adjusted to the new demands; the e-commerce imposes an active, flexible and structural approach of logistics, depending on the marketed e-commerce model, products and services.

The e-commerce has quickly become an instrument of strategic importance for the enterprises.

The e-commerce option implies the development and the implementation of some informational structures through different organizations based on the Informational and Communication Technologies (ICT), especially using the Internet technology in commercial transactions and in logistics activities.

The e-commerce may influence the structure of an enterprise and it makes the organizations reconsider the informational waves and the coordination mechanisms. The processes and the relationships are set up on new bases, implying important structural changes. The processes are integrated in a chain of value based on e-commerce in order to generate the real value. This eliminates the intermediaries and comes closer to the consumer; nowadays there is a real evolution towards a Web Chain of Value (WCV) for many enterprises.

Thus, the economic importance of the e-commerce also lies in the changes it generates in the enterprises activity. As a result of these changes, major increases of productivity are generated when the economic processes become efficient, and when the costs in firms are reduced; these reduced costs may mainly result from: reduced costs for a virtual firm setting up and management (when comparing with a real firm), reduced costs for the management of the goods in stock (using the *just-in-time* system), a better forecast of the market demand, an increased efficiency and reduced time for the management of the order, an increased efficiency of the sale processes, decreased costs for the post-sale services, reduced costs for the distribution of the electronically delivered products such as financial services, software etc.

E-commerce allows the market transactions to be differently processed when comparing with the traditional commerce. In a certain sense, the innovation generated by e-

¹⁷ E-Commerce and E-Business, <http://www.aect.cuhk.edu.hk/~ect7010/Materials/Lecture/Lec1.pdf>

commerce may be of three types (Dantuma and Hawkins, 2001): the product innovation (it involves the new products/services development or/and new characteristics of these products/services); the process innovation (it refers to the products/services conception and development); relationships innovation (it refers to new interaction methods between sellers and buyers).

The structure of the commercial transactions, where we may apply these innovations, or, where in certain cases the innovation is needed, has three different elements (stages) (Dantuma and Hawkins, 2001): transaction preparation (it refers to products and services information placed on the market and the way the market actors receive these pieces of information); transaction achievement (it gathers two elements, namely the order and payment agreement and the real transfer of the products/services from seller to buyer); production support (it refers to information taking over and its management regarding the achieved transactions in order to establish the market tendencies and support the operated products/services development, production and marketing)¹⁸.

The three types of innovations accepted within the e-commerce, (the marketing and logistics are involved in), are: the product innovation; the process innovation; the relationship innovation. The three transaction stages that may be interrelated refer to: transaction preparation, transaction achievement, production support.

Thus, many of the e-commerce effects are part of the process innovation, especially related to the transaction achievement and production support.

This relationship is in accord with the structural role of the marketing, playing the role of a function of an enterprise. A producer who lays emphasis on the marketing research quality will have the possibility to get the necessary innovations; these should be implemented on the market to get the expected success when competing; the same thing may happen with the services firms.

E-commerce has and will have a positive impact upon the processes efficiency and the client importance; this thing leads to a better internal and external communication, a better integration of the businesses processes, a higher transparency of these processes and of the on-line marketing and, generally speaking, to a higher flexibility of the management processes of the relationships with the clients.

E-commerce will extend the firm possibilities by cutting down the costs and by carrying out some more convenient services for the clients, and not by increasing the sales.

The effects within the production innovation area are assimilated with the system and the specific activities (order placement, registering and route) that are available for all clients as part of the logistical side of the business.

Both elements (production and process innovation) need some complementary actions within the production support. Many innovations monitor the performances keeping up the profit and the quality control.

As for the relationships innovation, e-commerce incidence refers to the fact that many logistical relationships, mainly those within the supply-deliver chain, have the tendency to become long-term ones.

The firms also start to exploit the power of the new tools which are oriented to the on-line marketing clients in order to increase their loyalty, thus increasing the clients' possibilities to become addicted to certain logistical services dealers.

¹⁸ Dantuma L.M.Y., Hawkins R.W, *E-commerce in the logistics sector. Assessing the effects on the logistics value chain*, TNO Report 01-41, TNO and Telematica Instituut, Delft, 2001, p. 93.

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ASPECTS REGARDING THE REQUIREMENTS OF LOGISTICS SUPPORT OF MILITARY UNITS DURING PEACETIME

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Abstract: *The main objective of the logistic support of military units in peacetime is providing the logistical support for the combat forces, which is necessary for the good development of education and training activities in order to fulfil every military unit's core mission. On the other hand, the logistical support during peace tries to keep the reserve stock of goods and materials in a good condition for any crisis, mobilization or war situation. Planning the logistics support of military units in peacetime depends on a number of general and specific requirements that must ensure the quality of the logistical support, which is necessary for carrying out the basic and fundamental objectives of each military entity, regardless of its hierarchical level.*

Keywords: *logistics; logistic support; planning; requirements.*

Current transformations of the national defence system bring new challenges and dilemmas to the armed forces. Nowadays it is necessary to ensure an optimal balance between the need of having well-trained and ready combat forces and the growing number of missions where material and financial resources are limited. In terms of modern military actions, the logistic bodies must ensure high-quality logistical support while significantly shortening the reaction time. The transformation and modernization of military logistics is perceived not only as a focus on future military actions, but also as a support for the effort made by combat forces to train and prepare during peacetime with the same material support and under the same conditions generated by the battlefield.

This ample modernization process of the logistics system must not consider only the leading structures and strategic levels of logistical support; it also needs to focus on the executive bodies by creating a bridge using the logistic support of the tactical and operational level. In other words, I believe that a logistic system performance can and should create conditions for combat forces to train and prepare in peacetime under the same conditions generated by the modern military actions. Also, the training sessions and training exercises must be performed during day or at night, in any ground conditions, climate, time, season and weather conditions and in accordance with the new requirements of the battlefield.

The logistical support of military units in peacetime has in aim the provision of logistical assistance for combat forces, necessary for the good development of education and training activities in order to fulfil the core mission of each military unit. In the background, logistical support in peacetime also aims to supply the reserve goods and materials for crisis, mobilization or war. When planning the logistical support of military units in peacetime, in crisis, mobilization or war situations, the general and specific requirements that ensure the logistical support should be considered. They must also be related to the operational requirements, "*meaning that the whole logistic effort, both military and civilian, should be focused on the mission accomplishment*"¹.

My opinion on carrying out basic objectives of military units in peacetime is that the management bodies of logistic support have to be involved in this ample process since the

¹ SMG / L-1, *Logistical Doctrine for Joint Operations*, Bucharest, 2008 p. 10.

implementation of the Main Activities Plan because we must bear in mind that the concrete situation of logistic support can have a profound effect on each activity of the approved plan. In this regard, the logistic assistance should support the list of essential requirements of each military unit, regardless of their hierarchical level. Therefore, I believe that the requirements during peacetime of logistical support can be classified in general requirements and specific requirements.

In the general requirements' category I would like to mention:

a) The separation and clear defining of the management bodies, which have as responsibilities planning, directing and controlling the activities of the logistics field by the executive structures.

The development of training activities of combat forces in peacetime and the reserve supply of the material goods for crisis situations, mobilization or war are characterized by concentrated efforts of the management and executive logistic structures. In order to have a timely and effective logistical support we must have in view a clear separation of the areas of action. Therefore, I believe that it takes a detailed plan made by the logistics management structures for an optimal use of the resources and materials from our own warehouses and those made available by the upper echelons. The endowment plan of material goods for combat forces will be respected and put into practice by implementing logistic structures in order to meet the approved goals and core missions in the plan of main activities of each military unit.

b) The ensuring of flexible and operational logistic components, in coordination with the hierarchical level, nature, value and core mission of the military unit to whom it provides logistical support.

Whatever type of military activities is established by the Plan of main activities, the planning of logistical support is performed in a specific decisional process, which will take into account the core mission of each military unit in peacetime, even if the unit is tactical, operational or strategic. Thus, the logistical component must be, from my point of view, flexible and operation, by ensuring permanent support for combat forces with everything needed for training and preparing in good conditions. In general, even if we speak about logistical support for activities or training in peacetime, I consider that the logistics management bodies will have to overlap the logistic effort of the entire logistic system over the effort of training the troops. At the same time, the logistic structure will constantly monitor the efficient use of material resources allocated by the upper echelon and coordinate the logistic activities planned to provide the combat forces with everything necessary for the proper course of military activities planned by the approved plan.

c) The elimination of duplicates and overlaps on the procurement of goods and services.

Inside The Ministry of Defence, in order to increase the efficiency of public funds and optimize the specific policies and procedures for the procurement of goods, works and services intended to ensure a sufficient degree of visibility, legality and fairness that allow fair competition between different businesses, we must be willing to offer such products as a result of incoming requests from various entities (units) from the military field. Conducting this type of process inside the institutional framework provided by the laws of public procurement and their implementing specific rules for Armed Forces, seeks to eliminate duplicates and overlaps, while this procurement is carried out as followed:

c.1) centralized at the Ministry of National Defence:

- **For the production logistics-** by the specialized structures of the Department for Armaments (DPA) for weapon systems, major equipment and integrated logistics support allocated to them, as well as contracts for this type of products (major technical systems, logistical support and maintenance for activities related to Army, Naval and Air, the complex

equipment of the national economy, weapons, ammunition, high-performance medical technology etc.);

- **For the consumption logistics** – by the specialized logistics structures of the Joint Logistic Command (CLI), Communications and Informatics Command (CCI) and the Medical Directorate (Dir. Med.), for equipment and materials, other than those of DPA's competence and services necessary to conduct the operations of the army, as followed:

- **CLI logistic bases** - for techniques and common materials of the military forces other than the DPA's armament, products and services for the preparation / support of forces;

- **CCI logistic bases** - Equipment / specific goods and services, other than those of DPA's etc.;

- **Pharmaceutical warehouse area of the Medical Directorate** - medicines, equipment and medical technology other than the DPA's etc.

c.2) decentralized:

- for the logistic consumption of the military units' products, services and projects which are not included in the system of procurement, in accordance with the regulations regarding the acquisition's components and the upper echelon's specifications (feeding, washing laundry and equipment, maintenance of equipment, medical instruments, office furniture, cleaning products and personal hygiene products, maintenance parts for any type of technique, reparation buildings, etc.).

I believe that, in the future, the acquisition will have a major role in ensuring all categories of assets necessary for the Romanian Armed Forces. Purchases will need to fulfil the requirements of market economy: faster, cheaper, better and high-quality services, but will also have to comply with the initial requirements established by each logistical structure of the military unit at the initiation of the property endowment procedures.

d) The implementation of an efficient system of registration and movement of materials.

For achieving this requirement, the assistance of next-generation software is required, which will ensure the accuracy of the data by creating an environment for useful information transfer. The introduction of computer equipment enables visibility both in storage and in the process of moving the material goods to the subunits.

The importance of this requirement is given by the efficiency with which the heads of logistics structures, both leading and executive, will be able to supervise the diminishment of the material goods stock, the queue times of the subunits that are waiting for the requested order and, at the same time, by the increased satisfaction level of combat forces who are spared the possible delays in the distribution of material goods necessary for their instruction and training in peacetime.

In my opinion, the implementation of an efficient system of registration and movement of materials comprises two fundamental aspects: providing visibility into warehouse stocks of materials and achieving visibility on existing assets within subunits. The implementation of this system ensures, as discussed above, reduced queue time of subunits (by replacing the quantity of inventory), by using a technological tool which measures the total time, since the issuing of the request until the time of receiving the materials for the requester. This tool ensures an effective feedback, by quantifying the combat forces' assessments regarding the assurance with everything necessary for living and training.

The visibility of material goods stocks in the accountant records of each military unit requires a boundless integration so that the access to information about the stock in transit or in storage, the products that are being processed, the availability of material goods or order status allows the heads of the management structures to execute and act as a single entity.

In essence, I believe that once implemented, this system for tracking the movement of material goods allows the heads of the logistic structures to easily move and manage the flow of goods, services and information in real time, since the beginning of each activity from the actions of logistical support of military activities in peacetime. Where necessary, they can intervene at the appropriate time in order to correct any deficiencies recorded initially or over time.

e) The maintenance of the endowed equipment.

The level of maintenance of the equipment can be determined by using cutting-edge technologies, which include, besides the high-quality materials, advanced technological and IT equipments. I believe that this modern equipment can bring benefits in terms of efficiency at the level of combat structures. Through access to these systems, the efficiency of the maintenance interventions increases considerably, by also increasing the performance and usability of the technology and equipment according to the operational requirements.

Strictly related to the effectiveness of interventions for maintenance and access to modern technological capabilities, I want to highlight the particular importance and efficiency of the diagnostic systems. By using sensors that can be installed in vehicles, a self-diagnosis program can be run in order to request maintenance interventions, which would lead to reduced inspection-time for the maintenance structures, reduced quantities of maintenance materials and personnel, by ensuring a high-quality maintenance process.

In planning the maintenance schedule, the planning and management departments (offices) of logistics support must make sure that the specific activities of the logistic support's field are performed as early as possible in order to ensure the military troops with the equipment they need for training activities in peacetime. Judicious planning of these activities, before and during the military activities, is of particular importance for diminishing any problem regarding the acquisition process.

f) The elimination of redundancies in the adoption and implementation of decisions on the logistical line.

The management of logistical support is composed, firstly, of information and communication and then making the best decision on the logistical line. Based on these considerations, the informational system of the logistical management support provides the logistics managers, at all levels, with the information received from internal and external sources, in order to use them when making foresight decisions for the logistical, organizational, coordination and control activities according to their specific competence. The informational logistic circuits must ensure the movement of information flows from decision makers to performers, in order to make the best decision on the logistic line and properly implement the tasks received by logistical structures.

My opinion is that the logistical support planning of each education and training activity and military actions in peacetime are carried out for all the functional areas of logistics and is developed for all its stages and phases, while also having in mind the permanent elimination of redundancies in the adoption and implementation of decisions on the logistics line.

g) The attainment of a fluent and coherent information flow in the logistics system.

One of the goals of the logistics support's military activities (exercises, training, etc.) in peacetime is represented by the efficiency level of the material goods' flow which must reach through different channels the logistic combat forces of each military unit. The relational and informational flows have been neglected and not considered important by the leaders of the logistics system. On the other hand, the speed of the information flow was lacking due to the documents' rapid movement.

Today, with the assistance of computer systems, the accuracy and speed with which information travels, I found how important it is to have logistic information at the right time in order to take a well-founded logistic decision. In recognition of information's importance, the logistics management support has as a study and expression tool the logistic information flow, along with the material goods and services flow. In specialists' opinion, the relational and informational flows provide integrity to all activities in the logistics field.

In my opinion, the relational and informational flows ensure the transmission of relevant information for decision making in the logistics sphere and most importantly it ensures good relations between the planning and management bodies and those for logistical execution. In this regard, I wish to mention that the data obtained by the logisticians are not always in the desired format for decision making and, because of this, they cannot be used whenever and wherever. Regarding the direct connection within the relational and informational flows, I consider that informational circuits should also be checked, because they represent the informational and decisional data route from the sender to the receiver or the vehicular way in which the information flows.

The methods for collecting, recording, processing and transmitting information that are contained in circuits or information flows can be determined through general or specific informational procedures according to the specific logistic situation.

In the military logistics environment, according to an opinion which I agree with, the logistic support's information flow represents "*... all the information flowing between originator and beneficiary, regardless of the nature or support used for their processing or transmission*"².

For a reliable logistics support, the informational circuits must be as short, rational and economical as possible. Please note that the length of the informational circuits influences in a significant proportion the functionality of the informational logistic support system for all the military units, regardless of echelon.

I believe that the specific features of logistical support, the information flows, should ensure effective management of the project and thus contribute decisively to ensuring the necessary quantities of goods and services at the right place and time, in the requested amount and with the most economical cost.

h) The quantity and quality of material goods needed to ensure military support unit should correspond with the basic mission received.

During the actions of logistical support for units in peacetime, special importance is given to the formation and acquisition of reserves and stocks of material goods in order to make possible the provision of the necessary quantities of logistic resources according to the pace of training of the combat forces and military activities in peacetime. Regarding this subject, principles, rules and methods were established for formatting the reserves and stocks of products, materials, spare parts and equipment, in line with the developments of the military structures, their missions, modernization plans and endowment so to allow rapid transition from peace to a state of crisis, mobilization or war. I believe that providing financial and material resources is a key determinant in the reserve stocks of goods and materials. In this context, one of the ways that allow the minimizing of negative effects of the economy fluctuations on the army is maintaining an optimal level of inventory at all levels which, in addition to their essential role in armed conflicts, are the safest source of materials in peacetime, crisis situations, disasters etc.

In the acquisition process of reserves stocks and material goods, the core mission of the unit in peacetime will be the first priority, but the mission that each unit can receive in

² Gh.Minulete, *Elements of logistics support management*, University of National Defense "Carol I", Bucharest, 2005, p. 107.

crisis, mobilisation or war will also be kept in mind. Therefore, I believe that the logistic support should be based, in terms of quantity and quality, on the real data and calculations while being able to support the military activities in peacetime and wartime until completion. At the same time, I support the idea that logistics should reflect the need of chaining the key-capabilities and must be adapted to each troop requirement, and finally the main activities of its establishment must focus on the needs of the military because they are the focus of military activities in peacetime, but this focus on people should not be done to the detriment of military equipment being supplied for them.

In the category of **specific requirements**, I would like to mention:

a) The management and coordination of logistic activities for creating uniform logistical support necessary for the military activities during peacetime.

Planning, management and unitary coordination of logistical support involves the combination of various elements of the logistics system from a military unit with other military and civilian logistical entities, which have as a goal the accomplishment of the military activities performed in peacetime (exercises, marches, etc.). Therefore, I believe that unitary leadership and coordination of logistic activities has a beneficial effect on the realization of effective logistical support of military units in peacetime, which will lead to achieving positive results that are advantageous for the success of basic missions and objectives approved by the Plan of main activities of the military part of each structure.

b) The provision of integrated and effective logistical support for combat forces in their preparation and training during peacetime.

The new training methods of combat forces in peacetime involve exercises in which multiple categories of military forces take part. They contributed to the creation of a joint military structure, and the logistic support had to be integrated in this unitary category of forces in order to achieve a joint logistical assistance. In this regard, I consider that this is how the modular and echalonable components of logistic support were born. They were capable of merging with other logistic structures of the national military defence system in order to ensure the logistical support necessary for the combat forces during peacetime, at the right place and time.

c) The zoning of logistical support and military transports in the Romanian Army depending on the restructuring of the military body.

The zoning of logistical support and military transport will be made according to the sources and resources in the area of ongoing military activities (training and education) because, depending on the available transport capabilities, additions can be requested from the upper echelons and also in order to spare the moto-resources, the intermodal transport of those echelons can be used. Therefore, I believe that the planning and logistics management bodies should take into account all the available means of transport by land, sea or air. The logistical support for troops in training or those in the transporting process to the place where the peacetime military activities are performed requires careful planning, execution and supervision from specialists in the logistic system of the composition of each military unit participating.

d) Ensuring the balance between combat forces of each military unit in peacetime and the existing logistics system.

Planning the logistical support for conducting military activities in peacetime can provide an overview of the available resources at a particular time and for a specified period so that the heads of the logistic structures may accurately anticipate the real possibilities of logistical support for any activities planned in advance.

Ensuring the balance between combat forces of the military unit in peacetime and existing logistics systems involves, in my view, the identification, building and maintaining of the logistical support in order to ensure the deployment of any military activities in the place

and time. Also, the logistical structures should be prepared in order to become elastic and mobile enough to make the correlation between the logistical actions and the training activities of troops. In this regard, I believe that the efficiency with which a balance between the combat forces and logistic support can be ensured depends on: the transmission and timely report of information on logistic line; establishing well-defined work processes for the logistic structures; the existence of appropriate communication channels between management and executive logistic bodies; the existence of functional links between departments (offices) of logistics support; clear understanding and implementing the specifications of the upper echelon.

CONCLUSIONS

The logistical system of any military unit must act quickly and effectively in order to provide logistical support for an optimal deployment of all military activities planned in peacetime, but achieving it requires knowledge of the essential requirements of logistic support, inventories and reserves of material goods. The logistics management bodies, the chiefs in the insurance division and their staff must adapt their logistic activities to the requirements that have progressively emerged, that are often hard to prepare. Therefore, I believe that by training the logistic support structures to act quickly during peacetime, they will develop a rapid reaction to the growing demands that can emerge in crisis, mobilization or war.

At the hierarchical level, logistical support has some very special requirements. Trying to reorganize a military activity (exercise, marches, training, etc.) or organizing other unplanned activities requires a rapid reaction from the supposed logistics system in order to redistribute the necessary material goods and to rapidly transfer the logistical support executives from a military activity to another. The physical and mental abilities that are required in order to cope with such predetermined requirements and the capability to rethink the plan if necessary are provided in the logistics system, through effective organization, flexible planning and efficient leadership.

The firm establishment of general and specific requirements for the logistical support can improve the capability of training the combat forces in peacetime and of achieving the ultimate goal of the military activities planned in the Plan of main activities of each military unit. If the initial requirements are in accordance with the ultimate goal of the military activity, then the logistical support activities can perfectly synchronize. The logistics management bodies, together with the executive bodies make the overall assessment of the military activities' conduct a necessary element for planning out the logistical support. The logistical planning must anticipate the requirements of the military activities in order to provide logistical support, reducing the need for improvisation. A judicious logistical planning requires a permanent coordination between the tasks of the approved plan of main activities and logistical support activities that underlie their execution. Therefore, in order to achieve success, the plan of logistical activities must withstand the changes made by the nature of the military activities in peacetime.

By analyzing the logistical support's requirements for military activities, I have highlighted the implications, multiple determinations and particularities of putting them into practice within the logistics support of training activities in peacetime. Understanding the interdependence between general and specific requirements of logistical support is very important, because they are interrelated and interdependent and require constant adaptation and development in order to achieve maximum efficiency. Therefore, I believe that some of the logistical support requirements may apply in all situations, especially during peace,

multinational operations, crisis, mobilization or war, while others can be applied only in multinational operations and crisis, mobilization or war.

As a final conclusion, I believe that the expanding of the spectrum of joint military actions adapted to the NATO's logistical support requirements has generated a consistent approach on the missions and tasks that the combat forces could receive. In this sense, I believe that the logistical support of the instructing activities of the combat forces during peacetime and the logistical support which underlies the constitution of reserve stocks and materials for war depend on a series of general and specific requirements that can also be partially found in the logistic doctrines and have been studied by multiple specialists, but their organization has only been planned for multinational operations or for crisis, mobilisation and war. Based on these considerations I suggest a correlation between the general and specific requirements of logistics support in peacetime, from doctrines, existing specialized instructions and regulations with those of logistical support in crisis situations, mobilization or war by introducing any previously unknown characteristics.

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MARITIME SECURITY AND STABILITY IN THE BLACK SEA REGION

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Abstract: *Security is a condition caused by a complex of social, economic, political, environmental, cultural, and favourable to normal life and to conduct the work of individuals and human communities in a geographically delimited area and in a strictly determined time.*

Maritime security, like other international approaches, is a term that draws attention to new challenges and together with the other elements charged with the security, is designed to protect against risks and threats current which is in development, and the future.

Keywords: *Maritime security, the Black Sea region, regional stability, threats.*

Introductory elements regarding maritime security

In the last decade most state governments which have the status of a country with an exit to sea and ocean, included in their terms of maritime security comprehensive approach at the same time with the adaptation and transformation of the organizational and acting structures to those of N.A.T.O./U.E.

In this process of redefining concepts and concerns about maritime security strategy, in 2014, Britain and the European Union have changed their strategies in the face of new threats and security risks overall. A more active actor, U.S., developed the concept after 2004 at the same time with the launch of the new maritime security policy ("Maritime Security Policy" - December 2, 2004). However, the notion of security has acquired a more pronounced pro-active in U.S. politics after 11 September 2001 as a response to fear associated with the spread of terrorism on the sea.¹

Security is a condition caused by a complex of social, economic, political, environmental, cultural, and favourable to normal life and to conduct the work of individuals and human communities in a geographically delimited area and in a strictly determined time.²

Since 2000, under the security strategies of the International Maritime Organization, the objectives of which can be compressed into one sentence - "safety of shipping and cleaner oceans"³ - has placed particular emphasis on maritime security once a new security regime for international shipping entered into force (July 2004).

The danger of piracy for naval transport and traffic brought international maritime dimension of security into the global consciousness and into the agenda of all international conferences and treaties especially after it has recorded a growth on the coast of Somalia and in the Gulf of Aden between 2008-2011, in order to find solutions to maintain safety at sea.⁴

¹ <http://bueger.info/wp-content/uploads/2014/12/Bueger-2014-What-is-Maritime-Security-final.pdf>

² Ion Chiorcea, Rolul componentei navale în cadrul structurilor de forțe ale UE pentru asigurarea securității prin cooperare la Marea Neagră, București, 2014, p. 11.

³ <http://www.agerpres.ro/flux-documentare/2014/02/20/organizatii-internationale-organizatia-maritima-internationala-10-07-40>

⁴ Marius Hangiu, Gigi-Cristinel Uce, Terorismul naval și implicarea forțelor navale Române în combaterea lui, București, 2012, p. 15.

From the International Maritime Organization (IMO) point of view, the six threats to maritime security that affects every port and every ship to some extent are: stealing goods, smuggling of drugs, psychotropic substances and chemicals on ships engaged in international shipping, turncoats and illegal migrants, piracy and armed attack directed against the ship, sabotage and terrorism⁵. Black Sea region we can add: political instability, economic and social development in new countries emerged after the dissolution of the USSR, fierce economic competition triggered by the need to exploit and transport oil from the Caspian Sea, the manifestation of aspects about organized crime, trade in arms, nuclear materials and narcotics trafficking, the existence of ecological risks, more frequent within the basin of the Black Sea and Danube and the existence of permanent zones-separatist ethnic conflict.⁶

The first major action against threats to maritime security (piracy) is recorded in the year 67 BC, when Rome's senate decided to clean up the empire's waters from the pirates after they took control of the major supply routes at sea and they gave dictatorial powers to the Roman Empire General Pompey to fulfil this mission.⁷

Therefore, we can define and talk about maritime security only in the absence of such threats. And it is not enough just a conceptual approach in terms of the phenomenon but, going forward, must become an answer to how to act to counter these threats and how they affect relations between the states involved.

It is believed, that the maritime security means the situation in the world maritime field in which, the respect for international law and national legislation is ensured, the freedom of navigation is guaranteed, and the citizens, the infrastructure, the transport, the environment and the marine resources are protected.⁸

The Black Sea region considering security criteria

Following the N.A.T.O. and E.U. enlargement, the western shore of the Black Sea region became the eastern boundary of alliances, regaining focus on key state actors and international organizations in the area intersecting multiple interests and historical links.

The new discoveries of deposits of energy in the region and the particularly complex infrastructure that would carry it to the beneficiaries, contribute to a lesser extent to improve the living conditions of the inhabitants, also the differentiated access to resources and large disparities of economic potential are sources of instability in the area.

Involvement in the recent years of the new state and non-state actors in the area imposed by improving regional institutional set new cooperation and strengthen security projects. However, in practice, they were limited only to solve their differences from the wide range of complex issues that the region was facing. The idea of cooperation, so circulated, did not materialize. State actors, considering their interests, have abandoned the vision of a multi-sector cooperation collective for goals such as gaining regional supremacy (Russia, Turkey), the conquest of markets and reaping large benefits (developed European countries), joining N.A.T.O. and U.E. (Ukraine), resolving internal conflicts (Georgia, Moldova)⁹ and the strengthening of asymmetric conflicts and terrorism.

Concerning the Black Sea maritime security there are two areas that exercises a certain influence and arise risks - the Balkans and Central Asia - troubled by ethnic and nationalist conflicts, areas where the two major powers, the US and Russia, are involved directly. Due to the existence of specific vulnerabilities in the Black Sea region, contrary to

⁵ <http://www.arduph.ro/domenii/altele/securitatea-maritima-abordare-conceptuala/>

⁶ Gheorghe Calopăreanu, Complexul de securitate „Zona extinsă a Mării Negre”, 2012, București. p. 57.

⁷ Cary, M. ; Scullard, H.H. (1975) *A History of Rome*, Londra: The Macmillan Press, p. 251.

⁸ Florian Rapan, *Teoria și practica securității*, 2014, București, p. 21.

⁹ Florian Rapan, *Teoria și practica securității*, 2014, București, p. 21.

the favourable international detente and cooperation, continue to manifest military or non-military threats and challenges that may endanger the security and stability throughout the region.

Also, the proximity to high risk potential areas - Middle East, borders of Iraq and Iran, the existence of routes of illegal migration - generated by people's desire to protect themselves from non-democratic regimes, left or expelled from the areas marked by tensions and conflicts - Africa, Middle East, far East, routes that are increasingly using maritime or inland streams, due to the fact that security measures of the U.E.'s land borders have become more drastic.

The possibility that the area would become a target of international terrorism because of the establishment of new US military bases in Romania, Poland and Bulgaria, as well as expanding missile defence (Romania and Poland) and the maintenance of ethnic conflict in Turkey, Georgia, Armenia or Azerbaijan and also some conflict situations inscribed by the phrase "frozen conflicts" such as Transnistria, Abkhazia, South Ossetia, Nagorno-Karabakh, Ukraine¹⁰ should draw a warning and should be a topic of military strategies planning. These events indicate a broader strategic plan that threatens N.A.T.O. and therefore Balkan states on the border of the western North Atlantic alliance, all against a backdrop of easing due to threats extinction at the same time with the end of the Cold War.

Russia's expanding presence in the Crimea creates the prospect of a rapid remilitarization of the Black Sea by intensifying military aviation and naval forces recalibration, increasing their ability to threaten and deny access to the allied fleets in the area. Currently, none of America's allies in this part of Europe have effective protection capabilities and direct defence against aggression.

The strategic importance of the peninsula has long been invoked and highlighted. Its placement in the middle of the Northern coast of the Black Sea provides remote position almost equal to all ports on the Western, Southern and Northern coasts. The value of the peninsula could be seized, if necessary, by a consistent and permanent military presence in the Black Sea region (Figure 1)¹¹.



Figure 1 – The importance of annexation of Crimea Peninsula

¹⁰ Gheorghe Calopăreanu, Complexul de securitate „Zona extinsă a Mării Negre”, 2012, București, p. 105

¹¹ https://www.google.ro/search?q=puterea+maritima+la+marea+neagra&espv=2&biw=1366&bih=667&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiUrPukoe7NAhUMKpoKHRywCnYQ_AUIBigB#imgrc=cDo5fECtWydTzM%3A

Russia uses the Black Sea as the best way to reconsolidate its position by controlling ports and sea lanes, threatening to stifle trade and energy of the drifting states, preventing NATO to create sufficient security for its members. Russia's strategy for the Black Sea could also disturb or interrupt energy supplies from the Caspian basin and Europe, established by the EU for energy diversification outside the orbit of Moscow.¹² This would reduce even more the ties between the US and Europe with Central Asia and undermine future prospects for gas deliveries from Turkmenistan and Azerbaijan to Europe.

Also, the installation of elements of a missile defence system NATO in several countries of Central Europe, including Romania, determined Russia to further develop its own missile ensembles, including the Black Sea Fleet, claiming that the action is a threat to its ballistic missile arsenal.¹³

Although Russia's final plans cannot be achieved entirely due to budget constraints, even a partial realization of these goals put under severe threat riparian countries, located in the South-Eastern flank of NATO, exposed to harassment.

CONCLUSIONS

Therefore, analyzing the situation in terms of the realities and prospects of maritime security, I believe that insufficient economic development of countries in the region, precarious relationship between them, political instability and fragility of new democrat states, unable to support investments and projects to generate economic and social development, create dependency of the most powerful states and it especially imposes enhancing cooperation in the region.

This can be interpreted as follows:

- Russia uses the Black Sea as the best method for position reconsolidation, preventing NATO to create sufficient security for its members;
- Energy dependency of countries in Eastern Europe and central Russia and even the huge market that Russia can make available to these countries with problems in exporting goods and services are important elements of the negotiations regarding the security of the Black Sea region;
- NATO and UE Member States neighbouring the Black Sea must carefully determine the allocation of resources, to analyze the advantages and disadvantages of geographical, economic, demographic and political rights to create a list of priorities which equally considers both own and allies needs.

Moreover, the interaction between UE, NATO, Russia and the US in the Black Sea region, their spheres of influence and security areas represents another issue, which is why the chances for a real development of the countries in the region are subject to an association with one of these poles.

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¹² Gheorghe Calopăreanu, Complexul de securitate „Zona extinsă a Mării Negre”, 2012, București, p. 104

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PARTICULARITIES OF THE MILITARY PHYSICAL TRAINING LESSON IN THE NATIONAL DEFENCE UNIVERSITY "CAROL I"

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Abstract: *The military physical training lesson continues to be one of the main forms of the educational process, constituting the means through which generations of students/trainees acquire or maintain - under the guidance of the teaching staff or on their own - the abilities and competences necessary for the accomplishment, at optimal standards, of the combat actions generated by the wide range of missions, as well as of the social life.*

Keywords: *military physical training lesson, physical abilities, educational goals, physical exercises, motor skills.*

Physical training and sport became over the time, all over the world, activities of national interest. In our country *the Law of physical training and sport* recognizes and promotes the organization and carrying development of these activities in educational institutions, within clubs of specific sport branches, in the defence, public order and national security system and other economic units, in order to positively influence the biological potential of the population on a medium and long term.

According to the above mentioned law, physical training and sport “mean all forms of physical activity that aim, trough organized or individual participation, to express or improve the level of physical fitness and spiritual comfort, to establish civilized social relationships and lead to the attainment of results in competition at any level”. According to the same law, military physical training is a compulsory subject, which is present in the curriculum. It is conducted systematically and continuously, with a frequency of at least 3 hours per week, over the entire period of the educational process.

Integrated into the general education and with deep prospective character, the military physical training contributes, through its specific content, to the achievement of the educational and social ideal, of shaping a personality embodying competence and activeness in solving arising branch specific problems and in self modelling.

Military physical training forms of organization

Forms trough which military physical training is organized in the “Carol I” National Defence University are those provided by the *Military Physical Training Regulation*:

- Military physical training lesson;
- Individual physical training;
- Refreshing/warm - up (for undergraduate study programs for initial training of officers);

Adrian Dragnea mentioned, in his paper “Theory of physical training and sport”, that “*physical training organization is a complex endeavour of ensuring, in an orderly, rational and coherent manner, educational activities, human and material forces and means, necessary to achieve the set objectives.*”

Relating to the national higher military training, improved and modernized according to the integration requirements of Romania as a full member of NATO and UE, the military physical training lesson continues to be the main form of organizing the educational process,

constituting the pedagogical approach through which generations of students/trainees acquire or maintain, under the guidance of the teaching staff or on their own, the abilities and competences necessary for the accomplishment, at optimal standards, of the combat actions generated by the diversity/wide range of missions, as well as of the social life.

Both the other aforementioned forms of military physical training and sports contests/competitions cannot fulfil the role and functions of the lesson. This stands as the main form of organization of the educational process, because:

- The physical training objectives are achieved through it;
- It is carried out systematically and continuously, having a mandatory character, according to the educational plan and class scheduling;
- It is carried out in an organized framework, under the direct leadership of a specialized instructor, whose role is to determine the educational contents;
- It highly capitalizes the gained teaching experience and teaching requirements, based on which the content of the used educational process, principles and methods is established and realized;

A particular feature of the military physical training lesson organization, at the “Carol I” National Defence University is the heterogeneity of the study groups. If the Bachelor programs groups of study are relatively homogeneous, in term of age and, to a large extent, the level of training, the situation in the case of the Master and postgraduate programs is quite difficult. For example, the age of the students from a Command Master program group can vary from 35 to 44 years. Also, in the case of a postgraduate program formation of study, the age of the students might vary between 25 and 50 years (sometimes over 50), not to mention that they can come from different structures belonging to the national defence and public order, with a special status, such as: military, police officer, civil servant, contract based civilian personnel. Moreover, some students/trainees may come from combat/operational structures, where the level of (physical) training is high, others from logistic, financial, human resources, public relations structures etc., where the training requirements are not at the same level as that of the first mentioned units.

General requirements of teaching the military physical lesson

The military physical lesson is a complex activity that exerts influence on multiple levels. In order for the lesson to be efficient, it is necessary, when organizing it, to take into account the following requirements, each having its own particularities specific to the university environment, as follows:

a) A clear indication of the topics and goals of teaching

An essential condition for a teacher to be able to guide and clearly outline the content of the activity is to state the instruction objectives specific to each lesson (topics), in agreement with the ones established in the discipline outline sheet.

Depending on the designed themes, the teacher sets basic lesson activities: exercises, efforts, methods and processes, materials and facilities and other measures imposed by the organization of the educational process. Owing to the fact that, in the university, in some peak periods (October-December and March-May) several series of training are succeeding at a fast rate, multiple formations of study are often planned at the same time. The institution’s sports facilities not being too bidder, the topics cannot have a concrete character with clearly delineated objectives, but rather a general one, for example – *The development of conditional and coordinative qualities in combined system. Sports games: volleyball, basketball, tennis.*

In this respect, teachers must judiciously organize the activity during certain sequences/parts in order to ensure that, depending on the material resources and the number of

groups of students/trainees, the rational effort dosages and an optimal density of the lesson are respected.

The themes are established before the start of the study program and established in the discipline outline sheets.

The educational purpose must be determined depending on where the theme is placed in a lesson or a system/cycle of lessons, the latter being different from one lesson to another: primary learning/initiation, building/fixing/automation, perfecting, testing, etc. The main educational purposes of the military physical lesson are:

- Learning: motor knowledge and skills;
- Consolidation and improvement: knowledge, motor competences and skills, abilities and behavioural habits, qualities, character properties/traits;
- Assessment and appraisal/appreciation: the level of development of motor skills, strength and endurance.

It is relevant to note that the subject and purpose are not identical.

b) Establishing an organic connection between the instructive and educative side, between the informative and formative function of the lesson

Knowledge, motor competences and skills must be developed in close connection with the formative action, positively influencing the processes of knowledge (observation, initiative, decision, imagination, thinking, etc.).

At the same time, the education and development of beliefs and feelings, moral-volitional and character features, social responsibility, are considered necessary to fully comply with the requirements of the military training.

A very important goal that is aimed for over the course of the military physical lessons is forming a spare time habit of physical exercise and sports systematic practice, with the purpose of maintaining the physical condition/shape, strengthening, recreation, emulation, that corresponds to the available resources and interests of the unit.

Therefore, formative influences of the physical exercise should not be regarded narrowly, only as favourable for and limited to improving the body's motor functions. This type of exercise is meant to achieve correlative influences, which concern the functions and activity of the entire body and nervous system, which has the role of coordination and integration of all system and apparatus activities.

The knowledge, motor competences and skills learned during the military physical lesson should not be considered worthless information, missing any applicative value and limited only to the field of movement. Perfecting the students ability to use the knowledge, motor competences and skills in different situations (especially those specific to the modern battlefield/ operational environment), developing their physical and intellectual level, positively influencing their affective, moral and volitional personality, represent other objectives that should be accomplished simultaneously with their acquisition and consolidation.

c) The choice of methods and procedures appropriate for the educational topics and purposes.

The choice of appropriate methods and procedures is determined by the learning-improvement stage, specificity and degree of difficulty of the themes and exercises, as well as the preparedness of the students/trainees. The instructor will fully demonstrate the exercise if the learning process is in the beginning phase, or only partially demonstrate when there is the need to point out an underlying part of the mechanism or the exercise structure is more complex. The instructor will also use the methodological techniques and procedures capable of activating the team, when addressing military students in their final year, who have greater representation possibilities, or mainly using intuitive methods, demonstration, at the start of the study programs, and particularly with the students/trainees from the civilian environment.

d) Use the lesson allotted/allocated time with maximum efficiency.

Using the lesson allotted/allocated time with maximum efficiency, effectively engaging all students/learners in an activity that is supported throughout its development, is one of the major requirements in teaching military physical education.

The military physical training lesson/session at university level has, in most cases, a length of 100 minutes. Given the fact that, more study groups can be planned at the same time, to eliminate inefficient use of time, shortening breaks and to rationally associate the themes, the training base and educational resources must be used at their maximum potential. Thus, to ensure optimal value time and increase the efficiency of the lesson, usually it is divided into two main parts:

- the first part, lasting between 30 and 50 minutes, is dedicated to organizing the collective of students, preparing the body for effort and selectively influencing the motor apparatus, recovering after effort/stretching exercises. This part is the stage in which the instructor works effectively with the entire collective, ensuring a balanced approach between demonstration and explanation;

- the second part, lasting between 50 and 70 minutes, is destined for learning, strengthening/consolidating or improving the motor skills from sports games that are practiced in the university, but also for the students/trainees requiring an improvement of their effort capacity, especially for developing their force and endurance motor abilities. At this stage students trainees are divided into groups and subgroups, depending on the level of their motor aptitudes and to ensure that the workload and effort intensity correspond to the objectives.

The efficient use of the lesson allocated time equally concerns the instructor's activity, as well as that of the students/trainees, their rational combination being an essential condition for the optimal organization of the educational process.

For the efficient use of the working time, measures are required to be taken regarding the motor density, meaning the ratio between the duration of the lesson and the dynamic effort. However for an efficient lesson, there should be a perfect concordance between its density and educational objectives.

The content of the military physical training lesson

The military physical training lesson content is determined by its topics and educational purposes. It consists of exercises and efforts established for the objectives and topics accomplishment, methods and procedures laid down for each point of the educational process.

The lesson content must, also, be consistent with the objectives of the military physical training and determined in accordance with the curriculum and discipline outline sheet.

The harmonious development programs used within the (frame of the) military physical training lesson combine ply metric exercises, strength exercises for the main muscle groups, exercises to increase cardiopulmonary endurance and coordination exercises, coupled with an execution speed increase from a repetition or lesson to another. The programs include motor acts that mimic procedures from different sports branches, especially from of combat sports, different types of push-ups, crunches and squats, interspersed with running and jumping exercises, the effort volume and intensity being adjusted to the students/trainees level of training.

In the part of the lesson dedicated to the development of the physical abilities, specific means are employed to improve the general physical training, mainly to develop the overall endurance and strength. The best form of fitness training is the development of the endurance

capacity. Thus, taking into account the psychophysical pressure being put on the military, the training lessons that are conducted with students from the initial training of officers and master of command programs are structured and planned rationally, so that they aim at the general physical preparation.

The force and endurance development triggering systems used in the same lessons or lesson cycles are as follows:

- Endurance running on varied terrain, with varying distances, between 1000 and 3000 m, on trails alternating descent and ascent, as well as running/jumping on steps/stairs;
- Resistance running (1x330m, 2x330m, 3x330 m, etc.), interspersed with exercises of force development (pull-ups, push-ups, crunches).

Planning within the same lessons themes aimed at developing endurance and strength is a feature of the military physical training - the cornerstone of the forces training process, although not meaning that the two physical abilities cannot be planned individually.

Specific exercises for overall body endurance development will be placed, usually, at the end of the first part of the lesson (as structured above) and will not exceed 20 minutes. This way, the instructor provides the possibility for all the participating students/trainees to develop their endurance through resistance running. The suggested training methods are for long distances, when the exercise is not interrupted by rest periods, such as: the uniform, alternative and "fartlek" method or interval training.

Lessons/cycles of lessons with the objectives of developing force will be planned, mainly, in the cold season, when the outdoor areas cannot be used, so they are carried out in gyms. These types of lessons will take into account the principle "from easy to difficult", thus rationally distributing the effort, first to overcome the resistance of the body, then with light weights (dumbbells, medicine balls etc.) and, after that, gradually using bar bells and equipment for traction and pushing

The most effective method of force development in relation to the facility existing in the university, has proved to be the circuit procedure, because a relatively large number of subjects are involved in the activity, and the circuit can be adjusted by performing exercises and rest periods *contretemps*.

In terms of the speed ability, indifferent of how much action would be taken regarding its development indices; there will be no remarkable results unless the other physical abilities are improved as well.

The topics of speed training, in its various manifestations, are planned only for the initial training of officers' undergraduate curriculum. Running school exercises are used as means of action in this case - running game ankle, running with swing leg forward/backward, running with knees up, sprinting, accelerated running, downhill running, and starts from different positions and at different signals, relays, etc.

The structure of the military physical training lesson

The issue of military physical training lesson is one of a great importance, which resulted, over time, in its evolution and debates between specialists in the field.

The physical education training lesson structure is a sequence of moments / phases / sequences / links / parts etc., in a unit of allocated time, which are differentiated by objectives, content, duration and methodology.

The physical education training lesson structure had a permanent evolutionary trend. For a while it was structured into parts and then in links.

According to the *Military Physical Training Regulation* the lesson/session like the physical education one in school, consists of 8 sequences/links, each with its own objectives, content, duration and methodology. Sequences 1,2,3,7 and 8 are planned and permanently

ongoing, while 4, 5 and 6 are theme based and can be designed one, two or all three in the same session/lesson.

In conclusion, the military physical education is a component of the military life quality, a health component, related to physical and mental resilience and to the ability of recovery after a mission. In this context, the practice of sports and physical exercises, during a lesson or independently, will improve the army personnel's lifestyle, while pointing out the importance of physical activity throughout life.

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ISSUES REGARDING THE ROLE AND THE STATUS OF THE MILITARY PHYSICAL TRAINING SPECIALIST

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***Abstract:** The study of the status of the military physical training specialist includes several aspects related to the behaviours that the instructor is entitled to expect from the pupils/students, military personnel, colleagues and superiors/the commander, all the people in relation to which the specialist is defined. According to them, the specialist in military physical training is rewarded through the positive acceptance and appreciation of those who come into contact with him/her, this sense of personal satisfaction besides having a protective role, also helping in building confidence in one's own forces and, as a result, improving both the professional career and personal life in general.*

The military physical training specialist has the role to transmit, correct, fix, consolidate and improve knowledge, turning it into motor skills, in an appropriate and volitional context, its finality being a role model of the military physical education.

***Keywords:** military physical training specialist, role, statute, capacities, motor skills*

Physical education and sports have always accompanied human activities, especially those that are military specific. Since ancient times the military has been concerned with finding the most appropriate solutions for the management of physical education and sport, effective leadership being the essential requirement for the success of any activity.

In this context, it becomes necessary to analyze, from a psychosocial perspective, the military physical training specialists (teachers, officers/NCOs responsible with the physical training, instructors and coaches), in order to understand how a person behaves in a particular situation, what habits and, especially, what attitudes should be adopted in relation to social values. This analysis implies addressing the following two concepts: the status and the role.

The status of the military physical training specialist

In the current context, in which the Romanian Army is part of the Euro-Atlantic structures, the status military physical training specialist should be presented as a combination between the set of attributions of his position as an educator, on one hand, and the profile of its specialization, that is physical education and sport, on the other.

The study of the military physical training specialist should include the areas of the behaviour that, the person occupying the position, is entitled to expect from pupils/students/trainees, military counterparts, athletes colleagues and superiors, commander, meaning people involved in defining the position of the specialist. According to them, the military physical training specialist lives with satisfaction the acceptance and appreciation of those who he/she comes into contact with, this sense of personal reward besides having a protective role, also helping in building confidence in one's own forces and, as a result, improving both the professional career and life in general.

The research regarding the military physical education specialist must target:

a) The financial aspects of the position. Given the fact that in most of the cases, the military positions/functions with responsibilities within the physical education and sport field, are not at the leadership level, they are remunerated as such. The financial aspects are relevant for the analysis, since through them other provisions of the status in questions, could be

achieved. Thus, this personal financial contribution to the family income is an issue that places the instructor in a favourable or unfavourable position towards the people that are instructed. Also, being involved in organizing and conducting specific activities (sports and military specific competitions, training camps etc.) should not affect the overall income of the family.

Another important aspect is related to the equipment that the military physical training specialist is wearing. It must be functional, high quality, appropriate for the activity that is performed, therefore quite expensive. In terms of not only clothing, but also sports equipment used in the educational process, the instructor must show a vast knowledge regarding the subject, as well as be a good example for the trainees.

b) The professional characterization¹ includes studies in the acquired field and qualifications/skills.

The status is influenced by the instructor's level of education (Bachelor, master, specialization courses/training, coach schools that acknowledge competence in the field), the military rank featured in the unit organizational structure and Teacher Grade (in the case of military educational institutions).

Specialists in physical education and sport that have a military rank obey the military law that establishes duties, rights and freedoms. In addition, the volume of work performed by officers/NCOs specialized in military physical training is established in accordance with the tasks set out in Military Physical Regulation and teaching staff load is determined by the National Education Law and regulations specific to the military education.

Important to note is that in many cases, positions that are independently responsible for physical training are not provided for in the unit's organizational structure, their task being performed concurrently, and in some units, where these are provided, the officers/NCOs that hold the positions are loaded with all sorts of other duties, with implications for their status.

Military physical training specialists contribute greatly to the achievement of the objectives derived from the plan of main activities of the unit, participate in military exercises/application, can be members of committees established at the unit level, committees for evaluation/control, lead or be part of boards / departments / commissions at any level of military education or be an extraordinary leader as master of a sports club/head of organizational structure. Thus, this status takes on other meanings, in this regard taking advantage of its capabilities for designing, planning, organization, management and evaluation.

One thing to mention is that the psychosocial status can be influenced by activities organized and carried outside the unit: sports competitions and practical-military training camps etc.

One of the tasks that complete the status of the physical training specialist is to conduct systematic selection and orientation of the trainees with skills in practicing various sports, especially those that are highly applicative at the military level. It depends heavily on their professionalism, if military personnel are carefully selected by skills, oriented samples and appropriate sports disciplines and, of course, monetize by specialized structures at various levels of military sporting;

c) Cultural status². It is determined by reporting military physical training specialist to cultural values, in general, and the values and traditions of the army in particular. Due to the specific activity they perform it is a consumer but also a producer of culture, not only by being a practitioner of the sport or you combine him with military activities, but also by the fact that perfects the educations of those he instructs in the spirit of recognition the cultural values.

¹ DRAGNEA Adrian, *Teoria educației fizice și sportului*, Editura FEST, București 2002, p. 207.

² *Ibidem*.

d) Moral profile³. It is common with that of any educator, characterized by honesty, loyalty, fairness and objectivity. Moreover, it should show loyalty to those who educates, encourage them in making driving difficult structures, should not be discriminative attributes contained in the code of ethics of the profession.

The role of the military physical training specialist

“The concept of role is closely linked to the status; there are relations of reciprocity between people and complementarity. The role is defined as all the behaviour that its members expect from some components...”⁴ for example, behaviour that a soldier under training instructor expects from relations of collaboration and subordination to it during meetings/lessons or other activities carried out jointly.

“One can speak of a general role, fundamental and particular roles, and specific”⁵. In the relationship between military physical education specialist and those he instructs, the fundamental role is dominated by the assistance of military in the educational process, but for this role, he meets the other role specific in relation to other people: unit/subunit commander, head structure training, medical practitioner, unit psychologist.

So to enhance the fundamental role of the military physical training specialist, a special role is played by the commander at any level. It is paramount for achieving an appropriate level of exercise capacity of the unit and subunit, and the commander must be an active participant in the physical training program, scientifically drawn by the specialist in the physical education and sport. He must be prepared so as to be an example to his men and women, to be a true leader. He shall also have to realize the benefits of good subordinates’ physical training, to ensure all the conditions necessary for improving or maintaining physical fitness, to ensure that all soldiers regardless of rank, age or gender are participating to the training program. He must ensure that the military physical education specialists are well trained in the field and complies with the regulations and that he / she makes an efficient use of training time allocated to this category.

Returning to the role of the physical training specialist, things are not so clear and easy. If every structure, every level has a commander, in terms of military specialists in physical education things do not look nearly as well. This situation arose as a result of the restructuring taking place in the army, few structures are currently benefitting of their services, which are mainly large echelons and military institutions. But in the operational units, where the warrior is formed, we think it is a great need for the knowledge of a specialist, but it seems that there is no place for them. In most cases, as mentioned above, functional responsibilities of the officer/petty officer responsible with the military physical training are part time or there is at most a sports instructor who has obtained his qualification after 2-3 months of specialization within the *Training centre of the military personnel in physical education and sport in the army*.

The specialist is able to carry out training programs in line with the development of the group and driving missions that it is to perform. He is concerned by the means available to it the physical and psychological recovery of soldiers after execution of the mission so they can respond in short time, with the same effectiveness the next mission.

Specialists serve to transmit, correct, fix, enhance and improve the knowledge, skills and turning them into skills in an appropriate moral and volitional context, purposeful pattern of military physical education. To create a positive framework in preparation he must have a good expertise, know the individual possibilities of the military and know how to motivate

³ *Ibidem*.

⁴ *Ibidem*, p. 208.

⁵ *Ibidem*.

them so they make every effort to achieve and maintain a high level of physical exercise capacity. Its main objective should be to choose the most effective methods of physical training to achieve a balanced program. This program must ensure the physical exercise capacity so that it delivers the missions incumbent on that structure no matter what. The specialist must be concerned equally of the soldiers with a capacity of great effort, of those with deficiencies in training caused by the low level of motor skills, of those with weight problems (overweight), of those who have a certain physical disability or suffer of a specific disease or recovering from an injury, surgery, etc. That means he must undertake a set of programs that differ because the military personnel differ a lot and especially in some moments of the educational process.

“We can say without fear of error that the military physical training specialist is *the sports adviser of the commander*, is the coach of a team which from the president or patron expects the results materialized into victories. Or, if neither the coach does not know, nor the team cannot express its true value.”⁶

Although in the above paragraph, the author makes full use of metaphor, I share his point of view, because the status and role of military physical training specialist interfere with status and role of sport coach. In many cases, apart from specialists who occupy coach positions in military sports clubs (this being their basic profession), officers/NCO`s exercising responsibilities in the physical military training become coaches of representative units team in military sport competitions.

In this case, the military physical training specialist is a very important factor in conducting physical activities because he trains the soldiers that practice performance sport and the direct purpose is not to develop the motor capacity, but the victory and the results which appear through the individuals with special physical development and specific exercise capacity.

In this context, the military physical training specialist can be defined as a person who deals with the designing, programming and managing the training process of the military that practice military sports, in order to develop performance thereof and obtain positive results in competitions. The structure and size of his personality coach status is subject to the assessment of many theories and practices of sports training, which makes me appreciate that our specialists in different contexts, fall in the vast typology of coach described in the literature. Also, he should have qualities such as responsibility towards results, consistency in achieving goals, maintaining authority to the collective desire to acquire new theoretical and methodical knowledge, organizational capacity etc.

In conclusion, military physical training specialists must surround themselves with a series of actions and relations roles in order to meet the requirements of their status. They are part of the mechanisms that put them in contact with others, enabling communication, comparison and interpersonal knowledge. For these reasons, I appreciate that most specialists in the military physical training must be trained through university studies in the own system of army and their training should include means to develop their professional expertise, optimism, scientific curiosity and permanent search of self improvement.

⁶ ANDREI Ion, *Influența educației fizice și sportului asupra capacității operaționale a structurilor militare*, teză de doctorat, Universitatea Națională de Apărare ”Carol I”, București, 2009, p. 54.

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THE INTEGRATION OF THE AIR SURVEILLANCE ELEMENTS WITHIN THE NATIONAL AIR COMMAND AND CONTROL SYSTEM

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Abstract: *The development of communication and information technology ensures the integration of reconnaissance and surveillance sensors into a system that provides an image of the battlefield which is more accurate in terms of the current operational situation in the theatre of operations. The sensors' capacity to supervise an area of interest, their performances together with their real time capacity of dissemination of the information to the systems that analyze data ensure the information supremacy over the enemy. The information provided will contribute to increasing the quality of decision-making and to optimizing the process of planning and conducting operations.*

Keywords: *sensors, unmanned air vehicle, air surveillance, C4ISR systems.*

The security environment is characterized by profound transformations, being marked by uncertainty and high degree of unpredictability generated by the increased diversity of threats, which engulf a large range of means from the conventional to the unconventional, hybrid, ones, imposing a new vision so that the actors involved will better manage the complex situations. The dynamic character of the security environment needs the permanent evaluation of threats, crises situations in order to identify their evolution trends and the measures for their prevention and counteracting.

Maintaining a proper national security level means *"to permanently adapt and adjust a set of internal parameters (economic, social, political, military, legal, cultural and moral) to the conditions of the international environment which is focused on the preservation of space, ideals and common values, and at the same time, on placing these elements in an environment that is not affected by risks and threats"*¹.

The need for security has triggered policies in the field of defence which to ensure as priority the integrity of scientific progress in the military field, technical superiority of equipments and arms systems, thus being a fundamental part of the vision shared by great powers at the beginning of this century as far as the war is concerned.

The leapfrog forward in science and technology, especially visible in information and technical field, has contributed to the shift from the industrial society to the information one, characterized by significant changes in all elements of social life. Information and communication technology has influenced waging war, fostering the implementation of superior technology in the military system, thus corresponding to the information society. The implementation of this technology will influence in a decisive way the evolution of the armed conflict by obtaining military technological superiority through the improvement of surveillance sensors and C4ISR systems, ensuring reduced reaction time and shorter decision-making cycle, thus contributing to establishing new strategic and tactical coordinates in the conduct of military actions.

¹ Mureşan, M., Ţenu, C., Stăncilă, L., Enache, D., Filote, D., *Securitatea Europeană la începutul mileniului III*, Editura Universităţii Naţionale de Apărare „Carol I”, Bucureşti, 2006.

Improved research, observation and early warning systems will permit to discover the activities undertaken by a potential enemy before a conflict will erupt. The lack of information about the activities of a potential enemy, about the equipments and arms systems, about his intentions and means to fulfil them, will contribute to increased uncertainty of the battlefield. Uncertainty can amplify with the spread of new technologies, through which, state and non-state actors have the possibility to perform asymmetrical activities, influencing the development of a potential conflict or war and acknowledging that war is *“the field of uncertainty, three quarters of the factors which lie at the foundation of war actions being shrouded in the mist of bigger or smaller uncertainties”*.²

The reduction of the uncertainty level is a permanent concern of decision-makers, who are mainly interested in obtaining useful information for the decision-making process, thus ensuring the success on the battlefield. The importance of information has contributed to its transformation in a valuable resource whose management is the constant preoccupation of all involved structures in the field. Mastering information gives the necessary framework for planning, organizing and conducting actions which provide the desired end-state.

Necessary information is obtained through a number of sensors, located in a network, which can ensure the precise and efficient engagement of troops in operations that have as a result minimal collateral losses and damages. These means will provide rapid reaction in face of the enemy, permanent adaptation in terms of strikes intensity to the complexity of the situation from the theatre of operations, having as a result the desired effects. This approach will require the enhanced circulation of information from the sensors to the structures that are specialized in analyzing and selectively disseminating it to the beneficiaries.

Air defence against a potential adversary involves the creation of an air surveillance system capable of ensuring the detection of enemy's aerial means as well as systems of air-to-ground missiles and attack aircraft that match adversary's air capabilities.

The air surveillance system is meant to provide information about the air enemy and is necessary at all levels of decision within the command and control system. It uses the sensors networks which include an air, ground, naval, and space component. The information needed by the air forces in the decision-making process and the early warning systems is obtained after the collection, integration, verification, analysis, and evaluation of data obtained from the sensors located on land, sea, air and space platforms which offer information about the economic and military potential of the enemy, about his resources, actions undertaken in different regions or areas, etc. The capacity of sensors to examine the theatre of operations and provide an image that is as close to reality as possible ensures the information supremacy over the enemy, thus, resulting in imposing your combat style and adapting the actions of your troops to the real situation of the battlefield.³

Information superiority⁴ over the enemy is obtained through C4ISR systems, which are made up of advanced surveillance and warning sensors, computer networks to process the data provided by them, command and control centres, as well as communication networks which ensure the dissemination of information to the authorized users, thus contributing to the enhanced operational possibilities of the air force.

C4ISR systems are meant to obtain information that is *“decisive and relevant at all levels of operational decision-making in order to allow troops to use them to fulfil the*

² Carl von Clausewitz, *Despre război*, Editura Militară, București, 1982, cartea II, cap. 6.

³ Dan Ghica-Radu, *Tipologia misiunilor în condițiile noului mediu operațional la începutul secolului XXI*, în cadrul sesiunii anuale cu participare internațională a CSSAS, Politici și strategii în gestionarea conflictualității, UNAp „Carol I”, București, 2008, p. 39

⁴ file:///C:/Users/petre/Downloads/C4I%20(2).pdf, p.19, accessed on 10.03.2017, 21.00

objectives in all the forms of military operations"⁵, ensuring the proper conditions for the decision-making processes of the air forces. The main purpose of these systems is to obtain and furnish information at the right place and time, to allow the beneficiaries from the air force to conduct proper operations so that the established objectives will be met.

C4ISR systems have to reflect not only the degree of implementation in the military field of technologies that belong to the information society, but also the conceptual changes determined by asymmetrical threats and hybrid confrontations. The latter have as an effect the shift from organized violence to the hostile influence of the military decision-making processes, thus imposing the development of an increased interdependence between the military and the civilian participants in operational scenarios.

Building complex C4ISR systems is a permanent concern of NATO member states, the progress in the field of specific technologies also contributing to this.

Military crises and conflicts have demonstrated the role of the C4ISR system in the information flow coming from both military and civilian environment. After its analysis, the collected information will give the clear image of the theatre of operations, providing increased possibilities of surveillance, reconnaissance and acquisition of targets.⁶

During conflicts, air surveillance has used a large range of sensors and reconnaissance systems on air and space platforms, which ensured the continuous and permanent surveillance of the theatre of operations providing the information necessary to reduce the decision-making cycle, and contributing to increased efficiency of organic troops.

An important role in air surveillance is played by drones, which have executed air surveillance actions with the help of sensors on board, offering a detailed and real image of a small, tactical, area. Another use of drones is when hitting a certain target with missiles on board and using precise targeting systems and ensuring the precise strike of the selected targets.⁷

Implementation of space, air, information and communication technologies in the military field will contribute to the implementation of new generations of aircraft, advanced C4I systems, surveillance and reconnaissance systems, precise hitting systems, etc. meant to ensure air superiority over the enemy. In this respect, the permanent surveillance of an area of interest will involve a larger number of UAVs with sensors on board, modernization of land radar systems or replacement of old ones with new equipment as well as development of military surveillance satellite systems.

In my opinion, the use of surveillance systems on air platforms could contribute to obtaining information for the specific actions undertaken during crises or conflicts that are characterized by the following aspects:

- Using drones in air patrolling missions in order to obtain information about terrorist groups, discovery and localization of terrorist hideouts and boot camps;
- Monitoring the humanitarian situation in the crises and conflict zones in order to draw a real picture of it in order to accurately evaluate the undergoing events;
- Coordinating the actions of the forces involved in solving crises and conflicts, ensuring humanitarian aid and protection of the population in those areas;
- Increasing the efficiency of the forces involved in solving crises and conflicts, humanitarian crises in the conflict areas, by adapting the actions to the real situation in those zones;

⁵ Ion Roceanu, *Fundamente ale sistemelor C4I*, Editura Universității Naționale de Apărare „Carol I”, București, 2004, p. 51.

⁶ <http://www.armyacademy.ro/biblioteca/CARTI/management/manci/a3.pdf>, consultat la 09.03.2017, orele 21.00

⁷ www.imagicons.blogspot.ro/2011/09/evolutia-armelor-dupa-11-septembrie.html consultat la 13.02.2017 ora 18.00.

- Monitoring permanently the theatre of operations and getting a real image of it in order to conduct efficient actions against the enemy, to reduce their offensive potential and provide the tactical framework for counteraction.

- Using UAVs, which have on board surveillance sensors, to patrol the areas where a crisis or conflict is deemed to surge, providing the necessary information to obtain a real image of the area and offering the correct evaluation of the current situation.

The image corresponding to a certain area of interest is obtained through the data coming from the sensors, transmitted in form of flows both vertically and horizontally. The existence of data flows is linked to the existence of information processes that are part of C4ISR systems, the result obtained after data processing being the information support for the decision-making processes or for creating the information basis at all levels of the structures that participate in the conflict.⁸

The importance of information aspects of planning and conducting operations can determine the need to identify and implement solutions to ensure their protection and to deny enemy's access to the information that is necessary for conducting own military actions. This will ensure the increased combat potential of military structures, improved reaction in terms of identification and response to a threat, increased efficiency of armed forces in the theatre of operations for fulfilling the missions. In this respect, we can state that conducting hostile actions will include, outside the air, land and sea environment, a new environment, the cybernetic one, which will become a characteristic of the operations conducted by all armed forces. Hostile actions in the cybernetic environment will involve not only military structures, but also civilian ones by using means that are effective at the border of peace and war state and are meant to influence decision-making processes in the political, military, economic and social fields.

C4ISR system provides the infrastructure and the services necessary for connecting surveillance sensors with the entities that evaluate, simulate, plan and make decisions, thus contributing to the decision-making processes based on the information obtained after its processing, and therefore, increasing the efficiency of force engagement in reaching the established objectives. We can state that C4ISR system plays an important role in obtaining information superiority over the enemy, thus contributing to decision-making superiority with impact on the efficiency of forces engagement which permits the fructification of opportunities that come up during operations.⁹ This results in the modernization of C4ISR systems in accordance with the evolution of information and communication technology, involving the identification of new methods and procedures of using them on the modern battlefield in order to ensure the counteraction and neutralization of threats to global, regional and national security.

Within NATO, the C4ISR systems are the optimal solution to interconnect the national command and control systems with that of the Alliance so that the members' strategic requirements will be fulfilled and the established objectives met.¹⁰

In this context, the C4ISR system of Romanian Armed Forces has to adapt rapidly to the fighter's needs and requirements by providing relevant information at the right time, place, and form.

C4ISR systems ensure the circulation of informational flows obtained after the processing of data coming from sensors and the dissemination of information to the

⁸ Ion Roceanu, *Fundamente ale sistemelor C4I*, Editura Universității Naționale de Apărare „Carol I”, București, 2004, p. 159.

⁹ *Idem* p. 151.

¹⁰ <http://www.scribub.com/stiinta/informatica/retele/Razboi-Bazat-pe-Retea-NCW-Netw23999.php>, consultat la 11.03.2017, orele 21.00.

authorized users representing both the forces located in the country and those deployed outside Romania, while being connected with the C4ISR systems from NATO.

Romanian C4ISR system has to provide:

- The transfer of critical information according to the beneficiaries needs, regardless of their level;
- Interoperability with similar C4ISR systems from NATO, UE, and other partner nations;
- Cooperation with structures from the Defence, Public Order and National Security System;
- Cognizance of the operational situation and dissemination of information to the authorized users for improving the decision-making processes and achieving decisional superiority.

One of the systems from C4ISR is the National Air Command and Control System, which provides the command and control capabilities that belong to the Air Force so that the national security objectives will be fulfilled and crises solved through the participation in the collective defence within NATO by conducting actions that are specific to the aerial medium.¹¹

Within the National Air Command and Control System, the air surveillance system is an important element that provides information about threats with land radars. The evolution of these systems aims at the neutralization of vulnerabilities triggered by modern air means, capable of evolving in the aerial medium without being detected. In this respect, it is of utmost importance to improve the parameters of the system and introduce new means and communication and information equipments in order to improve the processing capacity of data and the dissemination of information to the beneficiaries. The dissemination of information to the beneficiaries involves a unique communication system to provide the information necessary for a sound decision-making process.

In my opinion, the development of the National Air Command and Control System should modernize and improve the following systems:

- a. External communication subsystem will build communication channels which allow superior transfer speeds between *Control and Reporting Centre* (CRC) and remote work stations as well as between CRC Main and CRC Backup;
- b. Data processing subsystem will take into account the improvement of optimization algorithms regarding the use of resources while conducting operations;
- c. The information data communication subsystem will deal with the improved data transmission links so that they will support the transmission of a large range of data;
- d. Voice communication control subsystem will deal with the increased security of communication, possibilities of recording as well as the rapid access to the system in order to foster communication.

In conclusion, the need to secure access to information and the need to make real-time decisions have contributed to the development of C4ISR systems which provide data and information for the decision-making process by permanently having an image of the operational situation from the area of responsibility and obtaining information superiority over the enemy. The information superiority will result in providing in a prompt and complete way the information needed so that the situation will be permanently known and the decision will be made in terms of the efficient use of active weapons systems (air and anti-aircraft) in order to achieve and maintain air superiority in the area of responsibility of the joint force or in the theatre of operations.

¹¹ http://cssas.unap.ro/ro/pdf_studii/rbr.pdf, p. 31, consultat la 15.03.2017, orele 20.00

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PROACTIVE SYSTEMS FOR INFORMATION ANALYSIS PROVIDED BY AIR SURVEILLANCE MEANS

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Abstract: *Information is a valuable resource that contributes to the scientific and technological progress of human society, being, at the same time, a power factor used by state and non-state actors to promote their own interests. The management of this resource is performed by structures that are specialized in the collection, processing, and dissemination of information. The information necessary to plan and conduct air operations is the end product of the processes of collection and data analysis over a certain area of interest, obtained with the help of sensors placed on space, air, land or maritime platforms.*

Keywords: *proactive systems, sensors, air surveillance, CAISR systems.*

The beginning of the 21st century is marked by a new approach in the international politics characterized by the competition between the powerful states of the world „...for the affirmation and consolidation of the new actors of the world power game (...) in determining the evolution of the world and the establishment of the new international order”¹. Another profound element of influence on international politics is globalization, which emphasized the interdependence between states, increasing exposure to emerging threats in various parts of the world. Thus, changing external circumstances of the security environment contributes to profound changes in national security, helping to change the perception of protection and safety processes taking place within the social environment.

The increased insecurity affects all levels of society, contributing to changing the social dynamics of the emergence of disruptive social events that may impact upon the security environment.

The greater or smaller degree of insecurity is generated by the complexity of human society, by the inability to maintain an adequate level of protection for the activities meant to ensure the stability and functionality of social life in any conditions. The occurrence of adverse fault of disagreement in the systems and social processes are generating complex and diversified crises and conflicts expressing the need for their radical transformation or replacement with systems and processes that reflect the social realities of society.

Crises and armed conflicts are part of human society, having complex and dynamic causes, being the product of its imperfections as a consequence of tensions increase and becoming in their turn causes of the emergence of new crises and conflicts.

Regardless of the perspective from which we study this issue, crisis, armed conflict or war remain products of human society, a social phenomenon in all its aspects, with multiple causes and determinations. Armed conflict or war are extreme ways of solving a crisis, this being a product of politics, specific national interests, determined by political, economic, social and even cultural relationships.²

Recourse to military action is not always the best solution, as politics has several means to achieve its goals, generated primarily by scientific and technological progress, thus

¹ V., Paul, I., Coșcodaru, *Centrele de putere ale lumii*, Editura științelor sociale și politice, București, 2003, p. 13.

² Mureșan M, Văduva Gh., *Războiul viitorului, viitorul războiului*, Editura Universității Naționale de Apărare, București, 2004, p. 428.

contributing to the emergence of new types of war, such as the informational or the psychological one, which influence the physiognomy of the armed conflict.

The scientific and technological leap achieved in recent decades helped put an end to the dominant image of industrial society, thus contributing to the emergence and development of the information-based society, characterized by diluting the spatial and temporal constraints existing both within states as well as in the relationships between states. The development of information and communications technology caused fundamental changes in approaching, organizing and unfolding of any conflict.

On the background of these transformations, war has changed its physiognomy, typology, its manner of using weapons and combat techniques, the management of actions and troop training.

The information age has led to digitizing, electronic and cybernetic approach of the battle space requiring connection to a global network of all information entities by implementing integrated systems meant to collect, process and disseminate information that is carried through the circuits and information flows.

In any historical epoch information represented a fundamental element on the grounds of which military decisions were taken, especially in wartime, but in the computerized society information has become a genuine element of power and an important defence asset.

Global communication, the process of obtaining, processing and dissemination of information in real time to the beneficiaries causes fundamental changes in the mode of action of the armed forces during peace, crisis and war, generating conceptual changes on how to conduct military actions. From this perspective, tasks accomplishment requires the conjugation of efforts of all structures involved in the conflict, aiming at carrying out a sequence of IT operations, independently or in support meant to ensure an informational superiority over the opponent and increasing the efficiency measures implemented by their own forces in order to neutralize or destroy the distributed targets.

Effectiveness of military actions posed a challenge for military planners able to use the scientific apparatus available at a certain moment for a certain social group. The transition to the Information Society has sanctioned the primary role of information as an economic resource capable of compensating organizational deficiencies, limited financial resources, etc., specific to an organization or entity of the economic domain. The company information programs provided a wide range of tools and resources that help increase the efficiency of all human activities, no matter where they are deployed.

Access to information and knowledge has transformed the economic environment, where competition is a permanent feature, being as intense and full of unexpected as any military action. Exploiting the unexpected, the unpredictability of the information field, and its use for personal advantage will allow the private control of markets in the economic environment and by analogy the military will ensure control over the battlefield, allowing modelling and the use thereof for the benefit of its forces.

Military actions in the Information era followed the pattern established in the economic field generated by fierce competition, unpredictable, between various economic actors for control of resources and markets as a fundamental condition to earn a living and to make profit. The achievement of this goal is made possible due to the means put forth by information and communications technology, based on computer networks as the foundation for physical provision of necessary information at winning economic competition of companies, multinational corporations or states. Similarly, in the military, there were implemented policies and strategies aiming at increasing the efficiency of military actions by using computer networks to process the information necessary to conduct the decision-making process.

The control of information has forced states, corporations and even individuals into acting to protect sources of information and improve database while aiming at limiting the opponent's access to these sources and reducing the information content of the database thereof, so as to produce a mitigation of information operations carried out over its own forces.

The development of information and communications technologies has contributed to a uniform connection between information and action. In this respect, the unitary informational support is provided for all existing entities in the battlefield, which helps coordinate the actions carried out against the opponent. The achievement of the informational support is based on a network of military entities with different responsibilities and hierarchical levels, which are interconnected and make circulate information flows including data and information on the situation of the enemy and of friendly forces, requests for support and allocation of resources, missions, space confrontation, hydro meteorological situation, evaluations of missions results and the evolution of the confrontation environment.³

An important product of the implementation of information and communication technology in the military successfully tested in the conflict was the Network-Centric Warfare (NCW), which represents a successful transfer of experiences from the economic field in using networks in order to increase the efficiency of business and to get superior results. The use of computer networks in the military represented an important step in transforming information into fundamental resource, which, after being processed and disseminated to users, can lead to achieving informational superiority over the opponent.

NCW can take place in conditions of obtaining informational superiority, defined as a *"way to generate combat power through integration into an information network of sensors, decision makers and performers in order to get comprehensive and permanent knowledge of the battle space, greater efficiency in management (through speed, stability and strength), a faster pace of operations (through appropriate rhythm, intensity and density) achieving the synergy of the effects upon planned objectives, increasing sustainability and achieving a certain degree of auto-synchronization action"*⁴.

The organization and conduct of military actions in the Information era is carried out according to new strategic and tactical coordinates, based on technological superiority over the opponent, meant to achieve superiority in making decisions and to obtain the framework necessary for the achievement of the final objectives. The degree of implementation of these technologies will have an increasing impact on the battlefield of the future decisively influencing the conduct of military actions in the confrontation area.

The effects generated by the IT aspects of military conflicts have a high impact on the evolution of their physiognomy through the influence they exert on the battle space where "there are three types of functions: sensory, decision-making and of action"⁵. To each function of the battle space corresponds an entity whose role and place in the conduct of operations establish the importance of each feature at a certain time. We can therefore say that there is a specific entity for each of the above mentioned functions as follows:

- The sensory function is ensured by means of sensors that provide the necessary data for a proper knowledge of the battle space, displayed as network platforms operating in air, land, sea and space environment;

³ Bădălan E, coordonator, *Concepte strategice și operative de actualitate*, Editura Centrul Tehnic editorial al Armatei, București, 2004, pp. 68-82.

⁴ http://cssas.unap.ro/ro/pdf_studii/rbr.pdf, consultat la 10.03.2017, orele 21.00

⁵ <http://www.scritub.com/stiinta/informatica/retele/Razboi-Bazat-pe-Retea-NCW-Netw23999.php>, consultat la 09.03.2017, orele 21.00

- The decision-making function is ensured by the help of the management network present at all hierarchical levels, made up of separate entities that provide the necessary support in the decision-making processes;

- Action is provided by the network function of specific action performance structures of all categories of armed forces that use means of specific environmental impact and action by air, land and sea.

An important role of these networks is their contribution to achieving information superiority on the opponent by winning combats in the information field and by planning the necessary operations meant to maintain initiative during the conflict. Maintaining initiative involves knowing the real situation existing in the battlefield by using data supplied by sensors, which helps anticipate possible reactions of the opponent inculcating a proactive nature in all actions carried out by its own forces in the area of confrontation.

The term "proactive" is used quite often in the specialized management literature; yet it is not to be found in the Romanian language dictionary. The meaning of this term is accepted in a narrower context in the sense of taking the initiative, and in a wider context with the significance of being responsible, acting so that a person or a group of persons shape their working environment in order to be able to act for the achievement of their objectives.

We can say that being proactive means to control the situation, to anticipate problems or changes that may occur, being ready to act for what might follow. In contrast to proactive behaviour there is reactive behaviour, which characterizes a person or a group of persons who only act after a problem has occurred, thus showing lack of initiative and control over the situation, reluctance to accept change, to make adjustments able to diminish the impact of the existing problems upon the process of their own operations.⁶

The impact of information and communications technology in the military had the effect of producing networks able to interlink all entities in the theatre of operations. The use of these technologies has led to the crystallization of a new concept called Network-Centric Warfare, its role having been confirmed by the campaign in Iraq, where obtaining information superiority over the enemy contributed to neutralizing any negative consequences resulting from its favourable balance of forces.

From an operational perspective, the impact of the Network-Centric Warfare upon the battlefield will consider the following issues:

1. The use of the network concept will interconnect forces geographically disposed at great distances from each other allowing them to act as a whole, as a single system, in the theatre. This fact changes the realities of the battlefield, allowing the onset of military action without prior training, which would be predictable and detectable, as well as the possibility of getting effects concentrated in time and space with subsequent impact on the conduct of operations.

2. The use of computer networks to process the data provided by the network of sensors supplies the necessary information base for decision making at strategic, operational and tactical level, meant to allow timely hitting and neutralizing of the established objectives.

3. It allows obtaining high accuracy and a concentration of strikes in those areas where targets or threats were detected and identified at any time, influencing the opponent's behaviour and perception upon the battlefield.

4. The use of networks encourages initiative on the battlefield stimulating attacks carried out against the opponent.

5. The use of networks provides deployment of expeditionary actions, because of the advantages offered by the possibility of dissemination of information flows needed in every theatre of operations, due to which the deployed forces will benefit from such advantages,

⁶ <https://monicanicolescu.ro/tag/proactiv/>, consultat la 10.03.2017, orele 21.00

enabling the deployment of effective action without being constrained by the former realities of field fighting.

6. Using networks will allow supporting a discontinuous battle space without creating vulnerabilities specific for such situations, such as the possibility of encirclement of forces, discontinuities in the process of command, dysfunctions in logistics supply, etc.

The concept of Network-Centric Warfare involves the collection, processing and dissemination of information, made possible due to the development and improvement of the work carried out within networks, on the grounds of which information is generated as input for the decision making process, and in the form of decisions, as outputs of the network, disseminated in order to combat the existing structures in the operations theatre. The achievement of these processes is possible due to the fact that networks are structurally and functionally integrated into the C4ISR systems⁷, as its components.

The C4ISR systems perform in order to obtain information, which is "*decisive and relevant at all levels of operational decision-making so as to enable forces to turn them into goals in all forms of military action*"⁸, structures allowing the recipient to carry out appropriate actions for targets achievement.

The functional components of the C4ISR system are the following⁹:

- The human component represented by command and control structures that contribute to the development of the processes of analysis, observation, decision and evaluation;

- The informational component represented by the data and information obtained from various sources;

- The technological component represented by the IT equipments constituted as network and communications system allocated for the architecture of the C4ISR system.

The air defence against a possible adversary requires obtaining the necessary information provided by the aerial surveillance system that ensures detection of enemy air assets. Such information is disseminated towards the weapon systems represented by ground-air missiles and fighter planes that are effective for combating or neutralizing a potential air opponent.

It is also necessary to adopt a new proactive attitude, able to detect possible threats to national security. In order to neutralize such threats actions with a strong pre-emptive character should be taken to preserve control over the situation, instead of reacting to the emergence of threats, which is based on purely defensive concept, that of destruction or neutralization of air assets, which have penetrated the unauthorized national airspace.

The achievement of this goal is based on the C4ISR system that has the potential to materialize the necessary conditions for the integration of the elements of surveillance, decision and action that will ensure information, decision-making and operational superiority on the opponent.

The proactive nature of air defence operations must be analyzed from the perspective of functional components of the C4ISR system.

From the perspective of the human component of the C4ISR system, the proactive nature must be analyzed taking into account the aspects of staff training, focusing on initiative and the ability to analyze and anticipate any action taken by a potential adversary. The adequate training of personnel structures for command and control, allowing an accurate

⁷ Comandă, control, comunicații, computere, informații, supraveghere și recunoaștere.

⁸ Ion Roceanu, Fundamente ale sistemelor C4I, Editura Universității Naționale de Apărare „Carol I”, București, 2004, p. 51.

⁹ Bernard Szlachta, NATO Architecture Framework NAF 3.1., NobleProg Limited, 2014, [http://training-course-material.com/training/Nato_Architecture_Framework_\(NAF\)_-3.1_-_NATO_All_View](http://training-course-material.com/training/Nato_Architecture_Framework_(NAF)_-3.1_-_NATO_All_View), accesat la 18.02.2017, orele 21.00

assessment of the given situation will help in making decisions to ensure such pre-emptive actions, neutralization of potential threats and preservation of the existing situation in order to raise the security level.

From the perspective of the IT component of the C4ISR system, the proactive nature lies in the arrangement of sensors so as to monitor the areas of interest in the depth of the opponent's territory in order to collect data, which, after processing and analysis can provide cues that help anticipate the opponent's probable actions. Thus, decisions can be made so as to ensure the deployment of pre-emptive actions against the opponent.

From the perspective of the technological component of the C4ISR system, the proactive nature means to implement new IT and communications technologies in the information processing and disseminating networks at the same time adjusting or upgrading the architecture of communications and information networks related to the C4ISR system so as to provide the necessary support for the accomplishment of the pre-emptive actions.

The sensors' potential to monitor the theatre of operations in order to provide the necessary data for the achievement of an operational picture as close to reality as possible helps get IT supremacy on the opponent, ensuring a high degree of adjustment of their forces to the realities of the battlefield¹⁰ and impose its own way of fighting the opponent.

Increasing the effectiveness of one's own forces requires knowledge of the real situation of the theatre based upon data provided by sensors and processed via computer networks integrated into the C4ISR systems through which an image is made operational by being as close as possible to the reality of the battlefield.

In conclusion, we consider that a proactive nature of the operational concepts could be rendered only by achieving weapon systems capable to provide increased combat potential of the military structures. In case of threat they would help reduce the forces' time of response and increase the efficiency of accomplishment of the received missions. We finally spotlight the important role of the C4ISR system, which will be able to perform process and disseminate the information necessary for the planning and conduct of air operations meant to combat or neutralize a potential air opponent.

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¹⁰ Dan Ghica-Radu, *Tipologia misiunilor in condițiile noului mediu operațional la începutul secolului XXI*, în cadrul sesiunii anuale cu participare internațională a CSSAS, Politici și strategii în gestionarea conflictualității, UNAp „Carol I”, București, 2008, p. 39.

MAJOR POWERS INPUT IN RUSSIAN-UKRAINIAN CRISIS SETLEMENT

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Abstract: *In this paper I analyzed the implications of major powers in resolving the crisis in Ukraine: the degree of influence of great powers to establish a constructive dialogue between the conflicting parties and the role of peacekeeping organizations. I analyzed and researched specific ways used by the European leaders to overcome the crisis in Ukraine through various instruments and mechanisms.*

Keywords: *Russian-Ukrainian crisis, Eastern European space, geopolitical architecture.*

Situation in Ukraine shocked the international community. This conflict is a direct threat to the security of the European continent that involved major powers such as France, Germany and the United States, which have a significant role in the resolution of this conflict.

The annexation of Crimea to Russia in March 2014 launched a mechanism for a long-term confrontation between the Russian Federation and Ukraine on one hand, and on the other hand from Russian Federation and a coalition of Western countries. Since the beginning of this conflict, the international community has worked to reduce tensions in some regions of Ukraine. Right from the first manifestations of the conflict, it was very important the involvement of major powers, as well as stakeholders in the conflict.

The first step in resolving the conflict in Ukraine was to organize the meeting in Geneva where representatives of the Russian Federation, the United States and the European Union (S. Lavrov, J. Carrie and C. Ashton) have met to which was also invited the Ukrainian Minister of Foreign Affairs A. Deshchitza. Following the meeting, participants reached consensus on the text of the Declaration, which calls for release of captured buildings (those belonging to regional and municipal administration) and the dissolution of illegal armed groups¹. As it is known, the statement remained largely unfulfilled due to the outbreak of anti-terrorist operations, and then because of the referendum in unrecognized regions Donetsk and Lugansk.

However, "the Geneva format" was the first political and diplomatic international format for the resolution of the conflict in Ukraine, but it exhausted itself because, according to Foreign Minister of Russia S. Lavrov, it was useful first of all to establish a constructive dialogue between Kiev and the representatives of Donbas region².

After a sudden worsening of the situation in Eastern Ukraine in May 2014 there was a need for new negotiations involving mediators. On 6th of June, in France (celebration of the 70th anniversary of the Allies in Normandy), was held a meeting between the Russian President V. Putin and the newly elected President of Ukraine, P. Poroshenko, having as mediators the French President F. Hollande and the German Chancellor Angela Merkel.

¹ Text of Joint Diplomatic Statement on Ukraine // New York Times, April 17th, 2014. <http://www.nytimes.com/2014/04/18/world/europe/text-of-joint-diplomatic-statement-on-ukraine.html> (visited 21.02.2017).

² Лавров: женевский формат был полезен, но он пройден. // РИА Новости, 19 ноября 2014 г. <http://ria.ru/world/20141119/1034068622.html#ixzz3i20YcQs310> (visited 21.02.2017).

Russian and Ukrainian leaders have spoken face to face for about 15 minutes³. Later this format of negotiations was called "Normandy".

In late July it was announced the idea of organizing a meeting in the same format in Minsk. On 26th of August in Minsk alongside with the summit of member countries of the Customs Union, a meeting was held between Vladimir Putin and Petro Poroshenko. The two leaders decided on 3rd of September during a telephone conversation to hold a meeting in Minsk, "the Contact Group on Ukraine" including Russia, Ukraine, OSCE, with the participation of the republic of Donbas) on Monday 5th of September, 2014.

But on June 23rd, 2014 held the first consultation in a different format: Russia (Russian Ambassador to Kiev Mikhail Zurabov), Ukraine (former President L. D. Kuchma) and OSCE (H. Tagliavini, Special Representative of Switzerland). At discussions attended also the representatives of unrecognized republics of Donbass - O. Tzareov and A. Boroda. However, the negotiating format in summer of 2014 was inefficient because the heavy fighting in Donetsk and Lugansk regions continued.

M. Zurabov, L. Kuchma, H. Tagliavini, and one representative of the self-proclaimed republic Donetsk A. Zaharchenko and Lugansk I. Plotnitski who agreed and signed the "Protocol regarding basis of consultations of trilateral Contact Group on common measures aimed at implementing the peace plan of the President of Ukraine Petro Poroshenko and initiatives of Russian President Vladimir Putin"⁴.

Following the meeting in Minsk on September 5th parties have signed the joint agreement. In the first two points of the agreement speaks of the need:

- 1) Immediately stop of using weapons by both sides;
- 2) Ensure monitoring and verification by the OSCE strict no-guns.

In support of the agreement of 5th September, same participants signed a memorandum on 19th September on the implementation of the provisions document. The first three paragraphs stipulates as follows:

- 1) Stop using weapons by both sides;
- 2) Stop military units and formations of the Parties to the situation of the contact line of 19th September 2014;
- 3) The prohibition on using all types of weapons and carrying out offensive operations.⁵

Despite agreement from the summer and fall of 2014, hostilities have not ceased in Donbas and the armed forces of the parties was not established at a distance that would make it impossible to attack each other. However, the Minsk-Normand was continued through the efforts of the mediators. Since October 17th, 2014 in Milan "on edge" lines "Asia - Europe" V. Putin met again P. Poroshenko, A. Merkel and F. Hollande. Then Russian and Ukrainian leaders have spoken face to face. Belligerents held ninth meeting of foreign ministers of the four countries on 12th and 21st January 2015 when the parties failed to agree on a new declaration of withdrawal of heavy weapons from a safe distance. "The recommendation was adopted as a contact group comprising representatives of the Kiev authorities, police,

³ Text of Joint Diplomatic Statement on Ukraine // New York Times, April 17th, 2014. <http://www.nytimes.com/2014/04/18/world/europe/text-of-joint-diplomatic-statement-on-ukraine.html> (visited 21.02.2017).

⁴ Протокол по итогам консультаций Трёхсторонней контактной группы относительно совместных шагов, направленных на имплементацию Мирного плана Президента Украины П. Порошенко и инициатив Президента России В. Путина – 5 сентября 2104 г. <http://www.osce.org/ru/home/123258?download=true> (visited 21.02.2017).

⁵ Меморандум об исполнении положений Протокола по итогам консультаций Трёхсторонней контактной группы относительно шагов, направленных на имплементацию Мирного плана Президента Украины П. Порошенко и инициатив Президента России В. Путина – 19 сентября 2014г. / <http://www.osce.org/ru/home/123807?download=true> (21.02.2017).

representatives of Russia and OSCE chassis intensify work to implement the agreements from Minsk to form the required number of sub-working groups" - the Russian foreign Minister Sergei Lavrov said after the meeting of 21st January.⁶

Later, on 31st of January in Minsk held another meeting of the "Working Group on the issue of the crisis in Ukraine". With effort of diplomats and experts on Ukraine conflict resolution was established unprecedented meeting of presidents of Russia, Ukraine, France and chancellor of Germany in Minsk during 11-12 February 2015. Four leaders with the support of Belarus President A. Lukashenko interviewed more than 16 hours. Parallel consultations were held between members of the "Contact Group" that have signed up to fine some "complex measures for the implementation of the Minsk Agreement", and heads of state adopted a joint statement in support of this document.

The package of measures for implementation of the Minsk Agreement, agreed and signed the Trilateral Contact Group, was approved on 13th of February 2015 by the leaders of France, Germany, Russia and Ukraine, without being signed by them.

In support of the "package of measures to implement the Minsk agreements" Russian, Ukrainian, French Presidents and German Chancellor reaffirmed full respect for sovereignty and territorial integrity of Ukraine and expressed the firm conviction that there is no alternative for the resolution exclusively the peaceful resolution of conflict.

President Poroshenko, in a press release immediately after the conclusion of negotiations, stressed that despite the insistence and pressure, widening credentials Ukrainian regions will take place only in accordance with constitutional decentralization. Social measures in the occupied territories of Lugansk and Donetsk regions should be resumed after stabilizing the situation and restoring state sovereignty of Ukraine. After completing a political settlement will be put into operation with the OSCE, the joint protection of borders of Ukraine. By the end of the second phase, Ukrainian border guards must regain full control of the border. The OSCE will monitor the ceasefire regime.⁷

The new agreement of ceasefire was based largely on agreements on ceasefire, also adopted in Minsk on 5th and 19th of September 2014, which have been violated by conflicting parties. The new Minsk Agreement from February 2015 is not a peace agreement in itself, but a package of agreements on ceasefire in eastern Ukraine and the withdrawal of heavy weapons from the front line, being welcomed by a large number of European countries, USA and Canada. It is seen as a potentially significant step towards peaceful settlement of the conflict and the restoration of sovereignty of Ukraine in accordance with previous Minsk agreements. It has expressed its general belief that success will depend on agreements fulfil commitments made by all parties.

The leaders of Germany and France, who took part in negotiating of the agreement, pointed out that it is not a complete solution to the conflict, or a peace agreement. After negotiations, German Chancellor Angela Merkel said that much work remained, but the talks offered hope of a solution. For his part, President Francois Holland described the agreement as "a relief for Europe". For European leaders, which are facing another major crisis - the Greek, reducing tension in Ukraine, or at least freezing the conflict is a priority. If the ceasefire will hold, the EU would suspend new round of sanctions against Russia, which would have been a relief to European Union sanctions because the issue has generated significant internal frictions.

⁶ «Минский формат»: хронология и перспективы. // РИА Новости – Украина, 2 февраля 2015г. <http://rian.com.ua/analytics/20150202/362872062.html> (visited 22.02.2017).

⁷ Меморандум об исполнении положений Протокола по итогам консультаций Трехсторонней контактной группы относительно шагов, направленных на имплементацию Мирного плана Президента Украины П. Порошенко и инициатив Президента России В. Путина – 19 сентября 2014г. / <http://www.osce.org/ru/home/123807?download=true> (visited 21.02.2017).

The 2015 Minsk Agreement contains important visions with potential positive impact on the military situation in the area, the withdrawal of foreign forces and mercenaries from Ukraine. Separatists have been and remain dependent on Russian military troops and volunteers, without their involvement would not be able to cope with the forces of Ukraine. Russia, however, has denied involvement in conflict.

Political visions of the agreement, according to some analysts, are more favourable to the Kremlin. These include: constitutional reform in Ukraine which would provide the country's transition to a decentralized system of government (without stipulating whatever that is), the development by the Ukrainian government of a new law which gives special status for some areas in the regions of Donetsk and Lugansk, with that would confer powers on the legal, economic and social. Moreover, high-level participation and cooperation of separatist leaders at the Minsk negotiations reflected Russian influence.

From many points of view, Minsk Agreement is favourable to Russia, it managed to impose its options. In statement after negotiations, President Putin said there was reached an agreement on borders and on the agreed protocol was not signed by the leaders of the four countries, but the Trilateral Contact Group. Representatives of the separatist regions of Ukraine were directly involved in the negotiation. The two separatist leaders would have received instructions from Moscow to demonstrate that they are independent and should be treated separately, refusing to sign the agreement and prepared the Trilateral Contact Group. However, Minsk Agreement does not mention the role of Russia as a party to the conflict, or the presence of Russian arms and military personnel in Ukraine. In the Political Declaration of the four leaders provided re-negotiation of the EU-Ukraine, turning so this bilateral process into a trilateral regarding "practical solutions to the issues that concern Russia", which would involve Russia to negotiations and could affect the European choice of Ukraine.

The agreement includes several measures and conditions that could not be implemented by all parties. As a result, political will rather than the terms of the agreement will determine the success or failure of its application.⁸

Much attention has been drawn over the first three points of the agreement given which specifies that: 1) 15th of February at 00 h 00 min 2015. (Kiev time) Donetsk and Lugansk regions cease hostilities; 2) the two parties within 14 days of the ceasefire, withdraw all heavy weapons at equal distances from the line of conflict. The result is a security zone; the width of 50-140 km; 3) cease-fire and withdrawal of heavy weapons will be controlled by the OSCE, by technical means, including satellites, drones, radar and other means of monitoring.⁹

To implement these agreements the foreign ministers of the "Norman" format, have met again on February 24th, 2015 in Paris. Consultations and negotiations in the format of the Minsk Normandy occurred fairly regularly, their main task is the implementation of the Minsk Agreement of 12th of February 2015. Thus, on 13th – 14th of April, the foreign ministers of "Normand Format" have been meet again in Berlin on June 24 - Paris on April 30 and on July 17, leaders of the four countries talked on the phone.

Even if the Normand format is a high-level one, the President of Ukraine P. Poroshenko considers "the most acceptable and productive" Minsk format¹⁰. Kiev believes

⁸ Ce prevede acordul de pace privind Ucraina. Cele 13 puncte ale acordului de la Minsk. <http://www.mediafax.ro/externe/ce-prevede-acordul-de-pace-privind-ucraina-cele-13-puncte-ale-acordului-de-la-minsk-13817472> (visited 23.02.2017).

⁹ Ce prevede acordul de pace privind Ucraina. Cele 13 puncte ale acordului de la Minsk. <http://www.mediafax.ro/externe/ce-prevede-acordul-de-pace-privind-ucraina-cele-13-puncte-ale-acordului-de-la-minsk-13817472> (visited 23.02.2017).

¹⁰ Порошенко и Байден определили приемлемый формат переговоров по Донбассу. // Корреспондент, 21 ноября 2014г. <http://korrespondent.net/ukraine/politics/3446747-poroshenko-y-baiden-opredelyly-pryemlemyi-format-perehovorov-po-donbassun> (visited 21.02.2017).

that the prerequisites for a peaceful settlement of the conflict should be access to the line, closing the border between Russia and Ukraine, withdrawal of military equipment, the release of hostages and the reaction to the worsening social situation, implementing them would create conditions for a political dialogue¹¹.

On the other hand, many experts have sceptical opinion on the future format of negotiations, putting into question the ability of the actors to resolve the conflict. "Negotiations should continue, but the parties must try to continue to implement previous agreements. If this will not happen in Minsk discussions will fail" - declared president of the Center for Applied Policy "Penta" V. Fesenko¹².

Former Foreign Minister, now president of Russian International Affairs Council I.S. Ivanov said that at each stage of efforts to resolve the crisis in Ukraine involving Russia, the EU and the United States "could contribute to the search for compromise solutions in Ukraine that would reduce worsening internal conflict, stabilizing the political, social and economic changes. Joint efforts to solve the crisis have been taken, but the crisis has been a catalyst for differences deepest and most fundamental between Moscow and its Western partners on issues most fundamental policy contemporary world and the future world order " - remarked diplomat¹³.

Meanwhile, in parallel with Normand format and the Minsk were developed new diplomatic mechanisms to resolve this problem. In May 2015 occurred a visit to Moscow of the US Assistant Secretary of State, V. Nuland, but above all she visited Kiev. According to V. Putin's former advisor on economic issues, A. Ilarionov, there was a tacit agreement between the Secretary of State J. Kerry and President of the Russian Federation. "The agreement is to exchange Ukraine on Iran and Syria, so Putin to support Obama in talks with Iran and Syria and Obama's turn to support him on Ukraine. The transaction is concluded without the participation of Ukraine "says the expert¹⁴.

The existence of a new "agreement" was announced on 19th of May by the Deputy Foreign Minister of the Russian Federation, State Secretary G. Karasin, referring to the creation of an alternate format "Nuland-Karasin." This took place immediately after the meeting between the two diplomats on May 18th, 2015 in Moscow, who discussed "a range of issues related to the crisis in Ukraine." They stated about "The importance of direct dialogue with the representatives from Kiev with those from Donetsk and Lugansk representatives is very important. In particular it is very important strict compliance by parties in conflict of the package of measures to implement the Minsk agreements from February 12th, 2015 which is a good basis for a global solution " - mentioned in a press release of the Russian Foreign Ministry.

After the meeting between Karasin and Nuland they exchanged views on Russia and the United States, and possible ways of bilateral cooperation in terms of facilitating a peaceful

¹¹ Мирные переговоры по Донбассу: К чему привели женевский, нормандский и минский форматы. // Сегодня, 17 января 2015 г. <http://www.segodnya.ua/politics/pnews/voyna-slov-po-donbassu-k-chemu-priveli-mirnye-peregovory-v-zhenevskom-normandskom-i-minskom-formatah-584856.html> (visited 21.02.2017).

¹² Минский формат переговоров по Донбассу исчерпал себя – эксперты. // Корреспондент, 25 ноября 2014 г. <http://korrespondent.net/ukraine/3448010-mynskyi-format-perehovorov-po-donbassu-yscherpal-sebia-eksperty> (visited 21.02.2017).

¹³ Иванов И. Успешная «шестерка»: могут ли Россия и Запад договориться по Украине. // РБК daily, 10 августа 2015г. <http://daily.rbc.ru/opinions/politics/10/08/2015/55c8b9349a794702696a2c6d> (visited 21.02.2017).

¹⁴ Илларионов А. Сочинско-мюнхенская сделка Путина и Обамы по Украине. / 16 июля 2015 г. <http://aillarionov.livejournal.com/838957.html> (22.02.2017).

solution to the current political crisis in Ukraine. Finally it reached an agreement to continue the contacts between Russia and America on the Ukrainian issues"¹⁵.

In mid-July, B. Nuland again visited Kiev, after which the president of Ukraine P. Poroshenko, proposed to Verkhovna Rada a draft amendment to the Constitution, which gives a special status for self-proclaimed republics of Donbass. This happened after V. Nuland had a meeting with G. Karasin in Geneva. "We, together with American colleagues will analyze how to realize the implementation of Minsk agreements and how we can encourage the implementation thereof, including the impact on Kiev in terms of rapid implementation of its obligations "- he declared before meeting the Russian diplomat¹⁶.

Constitutional reform is a very important step and provides "decentralization" for Donetsk and Lugansk regions, following an agreement with representatives of these areas. But constitutional reform came to a standstill after the bill on decentralization of power in Ukraine, which provided for a special status for Donbas was voted on August 31st in a first reading, in the context of violence in Kiev, the first violence's after Euro-maidan from November 2013 - February 2014, many Ukrainians envisioned this as a concession to the separatists. One person has died and over 100 were injured during clashes between more than 1,000 protesters and security forces in front of legislative during the vote on this law, which adoption had been requested by Westerners.

Constitutional reform will be revised, it announced on December 23rd, Ukrainian news agencies. In January 2016, the Verkhovna Rada was planning to vote in the second reading the constitutional amendments concerning decentralization. Vote on amendments to the Constitution of Ukraine in a second reading was delayed because of opposition deputies to this law, the danger of the collapse of the majority coalition, the risk is that formations "Batkishvishchina" - a former prime minister Yulia Tymoshenko - and "Samopomoshchi" - the mayor of Lviv Andrei Sadovo - to leave the ruling coalition in parliament.

According to deputy party leader of "Bloc Petro Poroshenko"(BPP), Igor Kononenko, if the 300 votes to vote the amendments to the Constitution will not be met, the controversial point 18 will be transferred as an amendment in the draft judicial reform, already registered in parliament.

This position of Kiev against special status for Donbas was brought to the attention of US Vice President Joe Biden, during his last visit to Kiev in early December. "He had nothing against," said RBC-Ukraine one of the officials invited Biden's meeting with civil society representatives on December 7th. "However, implementation of the Minsk agreements was extended for 2016 and Russia does not fulfil its obligations arising from this agreement. That is why Ukraine is not obliged to adopt a Constitution with a special status for Donbas. The only issue on which insisted Biden is unity of coalition" declared the official¹⁷.

President Petro Poroshenko had affirmed earlier that the project with changes that include that gives special status for Donbas will be voted definitively only after it is found that the Minsk agreements are respected with regard to withdrawal of heavy weapons and reinstalling the Ukrainian authorities in the territories controlled by separatists

Unlike the format of informal USA-Russia, Ukraine has tried to promote Normand format by initiating negotiations with France and Germany, without Russian participation.

¹⁵ О встрече статс-секретаря – заместителя Министра иностранных дел России Г.Б.Карасина с заместителем Госсекретаря США по делам Европы и Евразии В.Нуланд. / Министерство иностранных дел Российской Федерации, 18 мая 2015 г. <http://www.mid.ru/web/guest/maps/us/> (visited 23.02.2017).

¹⁶ Наумов А. Нуланд и Карасин не против нового рандеву. // Независимая газета, 10 июля 2015 г. http://www.ng.ru/world/2015-07-10/7_nuland.html (visited 24.02.2017).

¹⁷ Retrospectiva evenimentelor din Ucraina. <http://www.agerpres.ro/externe/2015/12/25/retrospectiva-2015-ucraina-intre-acordurile-de-pace-de-la-minsk-si-temerile-fata-de-escaladarea-conflictului-15-10-37> (visited 25.02.2017).

President P. Poroshenko invited the leaders of these countries to Kiev for the celebration of Independence Day on August 24, but the Europeans have rejected the proposal. Instead, Merkel invited the Ukrainian president in Berlin.

Director of Kiev Center for Political and Conflict Studies Mikhail Pogrebinsky suggested that "... in Berlin's Poroshenko have been asked to take real steps taken to implement the conditions of the agreements from Minsk". German Chancellor Angela Merkel confirmed that their key theme was to discuss the conditions for the forthcoming elections in areas not controlled by Ukrainian authorities as Donbas. "Kiev is interested in what manners will be organized election and under what laws will take place " – mentioned Mikhail Pogrebinsky¹⁸."

Besides the numerous stages of negotiation, leaders of European states and the US adopted a series of economic sanctions against Russia.

In Germany, however, opposes further sanctions against Russia, although it noted some developments towards recognizing the fact that Ukraine is a victim of aggression. Chancellor Angela Merkel, whose influence for unity within the EU is recognized, stated "we can't abandon the sanctions, we will maintain", continuing, however, to oppose military support.

In this context internal and external complex for Ukraine, the European Union extended on 21st of December 2015, six months economic sanctions against Russia, while tensions trade increased between Kiev and Moscow, which imposed an embargo against Food of Ukraine, despite two years of negotiations. Russian President Vladimir Putin previously suspended preferential tariffs on Russian-Ukrainian trade retaliation against the announcement of the entry into force of the free trade zone between Ukraine and EU on 1st January 2016.

There is criticism that the sanctions have hit Russia's population stronger than in its elite, which would be a mistake that should be corrected not by weakening the sanctions in general, but by targeting them more efficiently¹⁹.

In the current geopolitical context, the project of a united Europe appears to be uncertain and the crisis in Ukraine acquires special significance. West is perceived as being in decline and the US as the only world leader legitimacy is increasingly questioned, not only by Russia. Germany has always been attracted to Russia because it relates more to the East than to the West; together with France, acted and was involved in mediation and problem solving direction of Ukraine.

So far, the conflict has not been resolved definitively but the situation has stabilized. According to some analysts of the security crisis in Ukraine takes the form of a frozen conflict similar to Transnistria.

In conclusion, it can be said that the crisis in Ukraine has affected the whole European community. Since the beginning of the conflict, the world's leaders have been actively involved in resolving the conflict. President of France, Germany had numerous meetings with the leader of the Russian and Ukrainian to find a viable solution for solving this conflict.

Currently the best way to solve this crisis is through diplomatic way but also the implementation of the Agreement points from Minsk in February 2015. Of course there were several steps and meetings regarding Ukrainian settlement but in our opinion the most effective proved namely to be meeting in Minsk.

However currently resolving the crisis in Ukraine remains an important objective of the European community and international organizations but their attention was directed to

¹⁸ Кузнецова О. Минские договоренности обсудили на три четверти. // Коммерсант, 25 августа 2015 г. <http://kommersant.ru/doc/2795656> (24.02.2017).

¹⁹ Sancțiunile impuse Rusiei <http://www.ziare.com/articole/sanctiuni+ue+rusia> (visited 23.02.2017).

another directions as, the migration crisis, for war crimes in Syria and jihadist group Islamic State.

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THE CONTEMPORAY MIGRATION FLOW WITHIN THE CONTEXT OF HYBRID WAR

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Abstract: *The huge and uncontrollable flow of migrants that European Union has to handle is based on essential human rights and liberties, considered by the migrants as weaknesses at the moment of European demographic decrease, of "political fairness" having no firmness and of a hybrid war in progress.*

Keywords: *migration flow, hybrid war, terrorism, democracy, globalism, crisis.*

Regardless the role and the status of each citizen within a social environment, all of them are human beings and thus, are beneficiaries of the principle of universality of essential human rights and liberties. This fact represents the basis of a durable development of the society, being a target on which the state must guide its policies. Now the essential human rights and liberties are various advantages granted to the man for expressing within his relation with the others and with the state owning the power, through normalizing ethical and moral behaviour, being guaranteed by the existence of institutional mechanisms which exist within the international environment.

Over the years, the failure to comply with such rights and liberties, determined various conflicts oriented to the tyranny and the oppression of the state ignoring and dispraising these values now considered universal by the democracy. This democracy is specifically Western; nevertheless, the word democracy belongs of ancient Greeks. I am sustaining this fact taking into consideration the benefits of economic, social and cultural transformations universalized by industrial revolution specific for the Europe of the end of 17th Century, the beginning of the 19th Century, under the aspect of the manifestation of Christianity, an adept of the unity and dignity of the human being.

„In Historical terms, the development of a global international society represents a function of Western expansion. Starting with the 15th Century, the increase of European power first eroded, and then crushed the old configuration of four civilization areas substantially independent from Europe, Middle East, South Asia and East Asia. At the end of the 19th Century, practically the entire international system was either created according to the image of Europe, like in the two Americas and Australia, or subordinated to Europe, like African and Asian colonies, or worked up to match Europe, as Japan or Russia. The triumph of European power means not only a suddenly and apparently permanent increase of interaction level (and thus of density and interdependence), but it also means that the Western norms, values and institutions dominated the entire system.”¹

The internal or the external wars, the colonialism, the political situation, the climatic changes or the natural catastrophes determined a different economic development of the states generating insecurity at the individual level and at that of human groups, having repercussions on global security. The huge and suddenly immigrations and emigrations of population had and have as a reason the economic factor provoking positive or negative effects for origin countries, and also for destination countries. These migrations allowed a continuity of propagating the modernity and the technological development at the global level, having as a

¹ Barry BUZAN, *Popoarele, statele și frica. O agendă pentru studii de securitate internațională în epoca de după Războiul Rece*, Editura Cartier, Chișinău, 2014, p. 173.

direct effect the self-support of migration flows. The international bodies, having attributions in this field and not only, must pay attention on this phenomenon.

The peace and the prosperity existing during the decades after the two world conflagrations imposed as a model for governing the nations, the democratic regime, and a guarantor of fulfilling the human rights. Today, more than ever, the principles of democracy are spread as an effect of globalization, a complex, dynamic and multifunctional phenomenon appearing beyond any spatial and temporal borders, where an essential role have also the non - state actors. The role of the state in this globalizing process may be completed by the interferences of Western economies within a global market, that private corporations and organizations show with interest for exploiting the opportunities through globalization of exchanges and capital between developed countries and some emergent countries, but ignoring many areas of the underdeveloped world. The serious transformations that appeared after the Cold War make us to be in front of “a period of great changes and historical premieres”².

Now we are in a moment when more or less by chance, on the background of a global economic crisis, when Crimea was annexed by Russia, the conflict of East Ukraine, the existence of the Islamic State in Iraq and Syria, the civil wars on the African Continent (Nigeria, Mali), the expansion of political Islamism to Western countries, the tragedies that affected the public area in various countries like England, France, Germany, Belgium, overlapping an unprecedented migration flow to European Union, preoccupied by keeping the peace and the prosperity, that has to handle other internal and external tensions provoked by ascension of populist - nationalist, anti-system or xenophobe currents, respectively the action of Russia under economic recession and economic sanctions imposed by the EU and the USA.

Taking into consideration all military, political, economic, social and environmental factors which concur to create an image of the international security climate, I may say that we are now in a period action of a “hybrid war” characterized by an aggressive propaganda regarding the Islamism in Europe, on one hand, and an attempt of Russia to avoid the sanctions imposed by EU and USA, on the other hand.

The concept of hybrid war was theorised by Frank Hoffman - a researcher of the Institute for Strategic National Studies of the National Defence University of USA. He says that “hybrid war includes a various range of conflict models including conventional, nonconventional capabilities, terrorist attacks, non-discriminated violence and criminality”³. According to the strategic concept of NATO, the hybrid threat means: „the capability of the opponent to simultaneously engage the own forces by conventional and nonconventional means for getting the own targets”⁴. The doctrine of US Army (ADP 3-0) considers the hybrid threat as a “combined and dynamic action of regular, irregular forces, criminal elements for getting benefits and effects favourable to all of them”⁵.

By identifying the elements that define the hybrid war, I find the following:

- ◆ Purposes / targets / benefits;
- ◆ Various conflict models;
- ◆ Forces: regular, irregular;
- ◆ Capabilities: conventional, nonconventional;

² Valentin NAUMESCU, *Marile schimbări. Crize și perspective în politica internațională*, Editura Trei, București, 2015, p. 16

³ Frank HOFFMAN, *Conflict in the 21st Century: The Rise of Hybrid Wars*, Arlington, 2007, p. 14

⁴ <http://www.act.nato.int/the-countermeasures-hybrid-threats-concept-development-experiment>, accesat la data de 26.02.2017

⁵ ADP 3-0, *Unified Land Operations*, Washington, 2011, p. 12 consultat pe http://www.army.mil/e2/rv5_downloads/info/references/ADP_3-0_ULO_Oct_2011_APD.pdf, accesat la data de 26.02.2017

- ◆ Criminal elements;
- ◆ Terrorism;
- ◆ Indiscriminate violence.

All these elements are used interdependently, creating from the beginning a considerable unconventional advantage in front of a neutralizing reaction, that most of the times is delayed. The decision regarding the use of force takes into consideration that the political factor has to identify, to analyse and assume the idea that there is a real menace. In order to avoid the escalation of violence or conflicts in progress, there is a trend to ignore or to diminish the existence of such threats just because it is impossible to declare a clear confirmation that the actions belong to a state or non-state actor.

The Western European environment faced different reactions (negation, fury, negotiation, depression or acceptance), on behalf of authorities, and also on behalf of the public opinion, regarding the flow of refugees from Africa and Middle East to Europe. Things changed by the terrorist attack in Paris in November 2015 when was discussed the unconditioned conviction of the atrocities. Also we must pay attention to the situation of Turkey that if had acted against the territories of the Islamic State in the same conditions like it acted in Syrian areas owned by the Kurds, also ignoring the position of Islamic State regarding the PKK and YPG groups, the Islamic State would have not existed, and by extension the terrorist attack from Paris would have not took place. It seems that a total war of the world superpowers (with free, democratic and civilized people) was declared against the Islamic State, nothing else than a religious group controlling a small land mostly situated in the desert. Behind the formal conviction and the rejection in all ways of Islamic State, there are various forces and countries secretly tolerating and supporting it, the reason being that within each civilization there are collisions: Christians against Christians, Sunnites against Shiites and so on.⁶ The Russian intervention in the Syrian conflict meant a demonstration of force able to decrease the US influence in the Middle East, and also proving that it may represent a support of the fight against terrorism. The suspicions about these actions concern the use of informational operations, the basis of starting the flow of migrants to Europe. The purpose of Russia in this relation with the European Union seems to be obtained: within European Union appeared various divergent opinions between political leaders, emphasizing the initial position regarding the firm conviction of the annexation of Crimea on March 21, 2014 to the Russian state, by a realistic and pragmatic approach to be followed from now on concerning the relation with Russia.

The European culture based on multiculturalism seems to be in difficulty when we discuss about cultural diversity of the essential values so different of Eastern world and of Sharia world, because in the name of “political fairness”, the terrorist acts committed in the EU continue to intentionally have no religious adherence.

The huge uncontrolled flow of migrants arrived in Europe at the end of August 2015 seems to belong to a war considered by me as a hybrid one. Taken by surprise, the European and national authorities decided some steps that have ignored the community rules defined by the Schengen Agreement, one of the pillars of the European construction. The simultaneous pressure of the refugees coming from various countries, like Libya, Eritrea, Iraq, Afghanistan, Pakistan, Syria, to the European countries has provoked many intra community tensions and political cleavages. For maintaining this crisis, the extremist, populist and nationalist political formations from France, Germany, Italy had also a contribution, fructifying their actions by Islam phobia and irresponsible speeches, by introducing into the collective mental a direct connection between terrorism and the waves of migrants, by demonizing all refugees and

⁶ Slavoj ŽIŽEC, *Refugiați, teroare și alte probleme cu vecinii. Împotriva dublului șantaj*, Editura Cartier, Chișinău, 2016, pp. 7-10.

members of Islamic State that share the same country and religion, intentionally confusing the Islam with the fundamentalist Islamism.

The confirmation on behalf of Marine Le Pen, the president of the National Front in France - a party of extreme right – of the quality of defender of the values of European civilization that Vladimir Putin may have, may represent an indirect proof that Russia supports extremist formations that support Russian interests.

The fact that in “April 2015, *RFI ROMÂNIA* announced:

On March 17, 2014, Marine Le Pen, in that moment in campaign for municipal elections, welcomed the referendum in Crimea as being not debatable. Next month, the Financing Fund Cotelec, chaired by Marine Le Pen, received on April 18, 2014 two million Euros from a Cypriot company, financed by Russian funds, according to *Mediapart*. And at the end of September, the National Front borrowed other nine million Euros from a Russian bank, explaining that French banks refused the requested loans. All these facts, and also the congress of the extreme right organized at Sankt Petersburg few days ago, made the experts to wonder if Vladimir Putin intentionally finances radical parties in order to destabilize Europe.”⁷, and make me consider that it is possible a casualty connection between the desire of Russia to be recognized again as a great power by a combined use of elements specific for a hybrid war: terrorism, conflicts, migration, conventional and unconventional capabilities.

The democracy makes the European Union to be different from other authoritarian political regimes. The essential principles of the democracy are those that today are discussed when are not exploited at the highest level, being considered as weaknesses by the immigrants choosing Europe as their destination. The cultural, religious and humanist inheritance of Europe did not substitute the authority to impose the actual values of the European Union: democracy, human dignity, freedom, equality, the rule of law. I consider that regardless the causes that produced this migration crisis, the European Union, through its representatives, will be able to elaborate and to apply a coherent strategy for managing and diminishing the negative effects provoked by migration.

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⁷ Sorin BOCANCEA, *Marșul asupra Europei. Noile dimensiuni ale migrației*, Editura Adenium, Iași, 2016, pp. 251-253.

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AIR POWER - MEANS TO ACHIEVE AIR SAFETY

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Abstract: *The concept of air power is not yet understood at its true value. Although its role has become increasingly important in the formation of military and national power, the concepts that define and govern air power remain relatively unknown to most people, even among military experts. This situation is mostly due to the fundamental differences in opinion regarding the fact that the evolution of the airplane as a mean of combat changed not only war tactics but also its strategies.*

Most changes into the scope of armed fighting were determined by air power that changed strategies, by constricting and, sometimes, eliminating the dividing line between the strategic level and the tactical one.

Keywords: *air power, air safety, airspace management, RENEGADE concept.*

Air Power – important component of a country's military power

Definition and content

Initially, the concept of air power was evasively defined being considered, as did William „Billy” Mitchell, „a capacity for air action”¹, as later wrote Michael Armitage and Tony Mason - two British air marshals „he ability to project military force in air or space by or from a platform operating above the surface of the earth.”² Although they were expressed separately in time, with nearly six decades between them, both definitions say about the same thing.

In recent decades „military experts began using a new concept expressed by the phrase air power, which defines the ability of a country (alliances) to project force, using air assets”³.

Although a generally accepted view about the significance of air power concept exists, it raises some uncertainties and ambiguities generating disputes in areas adjacent to the domain of definition. „It is sometimes mistaken for air force or is unclear whether or not it includes space forces and assets.”⁴

Military theorists have historically approached this issue from various perspectives, from the more plastic, such as that of William „Billy” Mitchell for whom air power is „the

¹William „Billy” MITCHELL, *Winged Defense: The Development and Possibilities of Modern Air Power—Economic and Military*, New York, G.P. Putnam’s Sons, 1925, pag. xii, quoted by dr. Mark Clodfelter, in the study „Airpower versus asymmetric enemies”, from „Air & Space Power Journal” – trim. II, 2003.

²Michael J. Armitage; Tony A. Mason, *Air Power in the Nuclear Age (Urbana, III, Prensă Universitaria of Illinois*, 1983, pag.2, quoted by dr. Mark Clodfelter, in the study „Airpower versus asymmetric enemies”, from „Air & Space Power Journal” – trim. II, 2003

³Dr. Mihail ORZEAȚĂ, *Misuse of airpower and its effects on a strategic level*, Strategic Impact no. 4/2006, National Defense University Publishing „Carol I”, Bucharest, 2006, p. 45.

⁴Air Flotila general dr. Victor STRÎMBEANU, *Airpower in national security and global paradigm*, Centrul Tehnic-Editorial al Armatei, Bucharest, 2006, p. 21.

ability to do something in the air"⁵ to other, more complex, as is the case of Admiral Radford, who believes that air power is „*the ability of a nation to exploit airspace for its self-interest, while at war it prohibits the enemy from doing the same.*"⁶

A definition, closer to the concept of aerospace, formulated by Philip Towle in „*The Dynamics of Air Power*” comes down to „*use or prohibition of the use of airspace for military purposes by the vehicles capable of controlled and sustained flight beyond the immediate conflict zone*"⁷.

Conflicts of the last decade have shown that „*air power is the only viable and politically available offensive weapon capable of ending and keeping under control an uncertain war.*"⁸ One may say that „*during peacetime, air power does not have an actual manifestation, only to the extent that it constitutes a deterrent to any aggressor.*"⁹ We believe that air power is the ability to act in and through the air at its own will and to be able to control the activity of others in the air up to a ban.

Nowadays, air power is accepted as the ability of a state or of an alliance to use, for military or even political purposes, aerial platforms that are transiting or operating in the airspace. In other words it materializes in a complex of forces, means and actions that allow a state or an alliance to defend its sovereignty in its own airspace, air traffic or of responsibility, to be able to impose sanctions, to have a permanent reaction for any potential opponent, to withstand the force exerted by it or to destroy its values, and globally, to contribute to the enhancing of mutual trust, freedom, democracy, security and stability.

Air power is a capability that ensures the usage of airspace in accordance with the will of the one that owns it and that prohibits or restricts any unauthorized use by any air operator carrying out aggressive actions or is considered a potential adversary. In other words, air power can generate an action or a fight and it creates favourable conditions to fulfil objectives proposed/set when used effectively.

Characteristics and key elements of air power

Air power has specific features that differentiate it from its counterparts' power - land and maritime: speed, range, altitude, perspective, increased flexibility, reduced vulnerability and ubiquity.

In most approaches, air power is characterized by speed, a decisive element in the projection of power at all levels of military art. All experts consider that speed is paramount and an essential condition in order to take the initiative, to minimize the exposure time of the air assets to the opponent's strikes and in the short reaction time, to arrive at the target and to hit it.

Range and altitude of air attack assets, research and transport, ensure the domination of the opponent and the execution of long-distance missions, generating the ability to strike anywhere and anytime, ensuring an outstanding freedom of movement compared to the land or naval forces.

Perspective, another feature of air power, and the advantage of altitude, offer a decisive advantage to the air observatory over the ground or sea one, whatever the nature of the sensors in use.

⁵Lieutenant colonel Charles Westtenhoff, USAFE, *Military Air Power - The Cadre Digest of Air Power, opinion and thoughts*, Air University Press, Maxwell Air Force Base, Alabama, 1990, p.18.

⁶*Ibidem*, p. 21.

⁷Dr. Philip Towle, *The Dynamics of Air Power*, edited by Group Captain Andrew Lampard and Arthur C. Williamson, Royal Air Force College, Bracknell, 1996, p.3.

⁸Colonel Robert C. Owen, *Definir la puissance d'air et de l'espace*, Air & Space Power Chronicle, www.airpower.maxwell.af.mil/airchronicles/cc.html.

⁹Commander dr. Traian ANASTASIEI, *Layouts on air problem*, Gândirea Militară Românească no. 1/2002, p. 24.

Other features that define air power are **increased flexibility** and **reduced vulnerability**. Compared to land and maritime power, flexibility - the most valuable feature of military air power - results from individual performance, confidence and initiative and is the ability to quickly attack a wide angle of targets at sea or ground, at great distances, as a result of aircraft capabilities to be quickly reconfigured for different missions.

Speed, range and flexibility of air power give it ubiquity and therefore ensure great capability. Because success in war is generally obtained from offensive actions, the allegory „*the best defence is a good offense*“¹⁰ is almost always true in the air warfare. Ubiquity allows air assets to operate anywhere, anytime, and that truly is freedom of movement.

To achieve its objectives, air power does not necessarily require its application. Its mere existence and the expression of political will of implementation proved sufficient in many cases in order to inhibit any hostile intentions. For instance, implementation of flight restriction („No fly zone“) above former Yugoslavia after shooting down four Super Galeb aircrafts by NATO aircrafts in February 1994, was enough to discourage Yugoslav aviation to act in a no-fly zone.

When listing the characteristics of air power we must add responsiveness, pre-emptive capacity, accuracy and effectiveness. Air assets have the shortest reaction time, they can be deployed and redeployed anywhere on the planet to meet any threats to global and regional security, with the possibility of striking vital points, centres of gravity and other fighting elements the opponent. The new generation of smart ammunition has a maximum precision in the use of cargo combat, important in any type of operations.

It is well known that air power has a strategic value and its evaluation is a complex problem. In other words, air power is at the same time, a value and an integral part of the military power of a state, conferred by information systems, air capacity and economic action in all environments.

Air power also has a priority role in the strategy of crisis and conflict management, because it has a **projective capacity** and constitutes support for deploying other forces. It has proven to be able of an outstanding surveillance capacity, reception and image transmission in real time.

Air power is closely linked to airspace forming with it an indestructible binomial. Aviation is able to engage the opponent in battle, acting in a much larger area than the common one for land and naval forces and thereby endanger its full war potential. Thus, by prohibiting actions aviation leaves the opponent in an impossibility to take the fight where it wants, and is able to save forces and means as proposed/planned.

To conclude, the characteristics of air power enable it to decisively contribute to achieving national, regional and global security. It is not excessive to say that when air power becomes reality, goals become achievable.

Its use should be directed to defend oneself not to conquer, objective that can only be met if political factors do not link it to territorial expansion interests.

It can be said that air power has reached a level of development that is not only vital for other categories of armed forces, but can sustain a war that sometimes it can win independently.

The role of air power in providing air security is, in certain circumstances, more relevant in times of peace than in war situations. Mainly because during peace, aims are achieved by simply maintaining air power capacity at credible levels (at least 90% of potential), while during war what matters is the violence directed at the opponent's targets.

The new configuration of air power, built in conditions of asymmetrical military confrontation, first of all of the danger of global terrorism will be defined by:

¹⁰Comandor conf. univ. dr. Vasile BUCINSCHI, *Air dimensions of air-ground warfare*, National Defense University Publishing „Carol I“, Bucharest, 2007, p. 89.

- High performance system for command and control, including modern telecommunications, air and space research;
- The ability to hit and destroy enemy targets with maximum precision and with minimal collateral loss, from a distance, through missile systems and weapons that execute strikes at a surgical level, in any weather conditions;
- Professional staff, prepared and adapted to the requirements of cybernetic battlefield;
- Adequate network of domestic air bases and landing sites with adequate infrastructure;
- Powerful fail-safe aerial means, to carry out protection through jamming and avoiding strikes from all backgrounds
- Modern projections of aerial means, renewed with strategic, tactical and logistic means of transportations, with refuelling in flight, for missions of crisis management and quick intervention.
- Air-ground and ground-air defence systems, to protect vital centres.
- Equipping with helicopters for the recovery of pilots and other fighters, for counterterrorism missions, special operations, etc.

In conclusion, air power can create a longer and more stable peace, discouraging threats and it can also shorten wars, with direct and significant influence over the state of war, while the vertical dimension of it aims, slowly but surely, to space power.

Air Power - Tool for air security

Politics and military aspects regarding air power

One of the most important attributes a democratic state performs is the protection of the population, its territory and institutions against any internal or external danger. To fulfil this objective, the state has many means which, used individually or collectively, must realize the set goals: „*diplomacy, alliances, external politics, commerce, external help, undercover activities or the use of the army*”¹¹. Sometimes, when non-military means are not applicable or sufficient, the state uses force - especially the military force - to defend its interests. The use of military force is the most expensive, not only considering the used resources, but also the credibility and international influence. This is also the reason it is the last resort, because usually, violence brings more violence.

Air power which is a manifestation of the strength the state has in the air is the one that can have achieving the strategic goals proposed. In other words, the military component that is the most agreeable with politicians nowadays as a quick and decisive solution in imposing the ultimate goal desired, even if it's the most expensive financially, seems to be air power.

From a strategic point of view, air power, as well as armed forces overall, depends on the politic will to develop and use. Caution should be exercised, engaging air power only when it can produce the intended results and when the costs (politic, diplomatic, moral and of other nature) are acceptable.

However, a big question arises: what can the objective and the political will of a state that does not condone the development and use of air power be?

Air power is able, in particular circumstances to persuade leaders of certain countries to sit down at the negotiating table. The link between air power and political will cannot be addressed without understanding the objectives of the latter. In other words, civilian leaders with an incomplete training and lack of knowledge of the battlefield, located at a safe distance

¹¹Major General Gheorghe CATRINA, *Air power as a political instrument*, Gândirea Militară Românească Magazine, issue no. 1, 2002, p. 9.

from it, may complicate the management of operations and even cause disasters through political decisions they adopt. An obvious example in this respect is represented by the Johnson administration, between 1965 and 1968, that ordered the cessation of bombing of North Vietnam in violation of the most basic doctrinal provisions concerning the application of a continuous, intense and concentrated air power on vital systems of the enemy.

Air power, through its multiple valences, is a capability that can prevent escalation of the conflict (tensions), can exploit the opponent's weaknesses, damaging its ability to replicate or develop a conflict or a state of conflict. Nonetheless, no air power can operate without unwanted side effects when actually used, materialized in human losses, including civilians and great material damage.

Air power control

Air power control is a complex matter that goes beyond military sphere and whose solution must take into account several principles without which no sustainable solution can be reached. First of all, the effectiveness of air power is given by the existence of a unified command and control system that must exist and function during peacetime as well. Its extension should be closely linked to the ability to cooperate with other categories of armed forces in order to coordinate efforts in a joint operation.

Air power control coexists in close liaison with the political sphere. Air power with an optimal structure and maximum efficiency will be impossible to create if a decisive political factor is not involved in this matter. Reconfiguration of air power as a means of achieving air safety is accomplished with budget contributions decided by the political and with modernization recommended by specialists. Effectiveness heavily depends on the quality of professionals who will be appointed to represent requirements of their non-political and non-involvement of politics in determining the criteria for appointment of the military in decision-making.

Political power has influenced and continues to influence air power and is dependent on the economic strength of the state. How they manage and they relate to foreign policy determines whether state independence is real or false.

Political leaders must be constantly advised by experts in aviation and law in order to be able to issue such acts which, when applied, are able to ensure consistency between air capabilities and various political objectives, influencing the formulation of the latter in making the most of the inherent advantages of air power.

In other words, it is imperative to prepare political leaders for appropriate enactment on air power capabilities during peace and war. In times of peace, it appears simpler to authorize, under national law, an attack using Air Force Service fighters on an airplane with passengers on board, declared a Renegade, than the declaration of war, but both decisions require deliberation with equal severity. It is the reason why the use of the „destructive air power" must therefore be the result of a deeper analysis of gain in relation to the political and moral risks and costs the citizens endure, simultaneously, having regard to the applicable law, international humanitarian law.

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THE AIRSPACE MANAGEMENT - DEFINING ELEMENT OF AVIATION SECURITY

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Abstract: *Romania joined NATO not to benefit from aviation security, but to participate in its creation. Given that terrorism is evolving towards internationalization, NATO is trying to engage more strongly in the management of major global issues, the European Union is preoccupied with achieving a visible identity, Russia struggles for regional and global hegemony and China “is installing comfortably” as global economic leader, air safety task management is moving towards specialized structures of these organizations or the institutions set up specifically for this purpose.*

If by the time of the Second World War, studying security issues was regarded as an exclusive attribute of military technicians, modern times involve specialists from all fields in the study of this concept, the theme, „security/safety” becoming a discipline for many universities.

Keywords: *air safety, airspace management, air traffic management, airspace control, air traffic control.*

Airspace management

The airspace management has emerged as a necessity, determined by the fact that the air situation has become very complex, airspace seemed unlimited, but the operation, which, until the '90s, was made without significant restrictions within limitations, began to become increasingly more difficult. International bodies with attributions in this area were put in a position to find legal framework regarding the management/control of airspace closely with management/air traffic control.

They started to give priority „0” to flight safety and therefore to the traveller, with non-discriminatory treatment in the allocation of airspace process, with a unified approach to all consumers of specific services' requests. Both at NATO, through the Committee for Air Traffic Management - NATMC and at European level, where the European Commission had a final say, the concern for better service, flexibility and cost efficiency, has become an urgent necessity. To this, the need for shared, efficient and secure use of airspace by the increasing numbers of all military and civilian users was added.

It is an undeniable truth that during the extremely complex processes associated with globalization and information age, time factor has become a key element of our existence.

The „time” component had increasingly acquired higher valences, it already being a basic element in the acceleration of circulation of information and resources. Consequently, air transport has become an extremely important area, which is already manifesting as support and also as an engine of these changes, itself having an unprecedented development in Europe. As a result of increased civilian air traffic, airspace became sufficiently crowded to determine the manifestation of the increasingly acute competition between civilian and

military air carriers for areas and time of operation, such as Western European airspace, where the settlement was made with political involvement in setting priorities.

Their concerns are related to the organization and use of airspace in order to remove constraints for airspace management/air traffic imposed by national borders and to improve through flexibility, the control procedures of space/air traffic.

Since the 90s, the issue of airspace management has been a constant concern for experts in the field. This includes activities for forecasting, planning, organization, operation, control of airspace aviation activities conducted in airspace or in connection with it and is focused on: single national policy for the use of airspace; the existence of a single national civil-military body, managing the airspace; standards, regulations and specifications concerning personnel, technologies, techniques, procedures and operating language; rallying to international regulations on the regime of free airspace and air; the existence of clear regulations on the gradual transfer of authority in matters concerning airspace and full takeover of airspace, under military rule, during crises and war.

Flexible Use of Airspace – FUA

Citizens of the world are becoming increasingly mobile, and the number of people travelling by air for business or pleasure is growing, prompting the constant changes in frequency and in the conduct of air transport worldwide.

In the early 2000s, amid the spectacular growth of civil air traffic, but also the increasingly needs of the military one, when airspace situation in most parts of Europe became increasingly complex, the ability of air traffic management systems had been exceeded, what caused significant delays to flights.

It was a key moment, when the solution adopted by the Member States of the European Organization for the Safety of Air Navigation – EUROCONTROL has been to implement the concept of „Flexible Use of Airspace" - FUA, which „*satisfied the demands of civil aviation, to increase airspace management capacity, as well as the requests made by military aviation for assignment of airspace necessary for training and operational tasks*".¹ The objectives set, in close connection with the modernization of ATM - Air Traffic Management, were increasing the capacity and fluency of air traffic to avoid delays, strengthening civil/military collaboration, flexible use of airspace, carrying out tasks specific to military aviation and reducing the load of air traffic controllers.

For civil and military aviation „*airspace is a common finite resource which needs to be divided reconciling conflicting demands*".²

Flexible use of airspace is an airspace management concept initiated by the International Civil Aviation Organization (ICAO) and the European Organisation for the Safety of Aviation (Eurocontrol), according to which, airspace should not be assimilated strictly to civilian or military, being a continuous space, where both users must satisfy their requirements and objectives.

„FUA concept" was governed by clearly defined principles:

- Coordination and collaboration between civil and military authorities at all levels, strategic, tactical and pre-tactical by establishing agreements and procedures to increase safety and airspace capacity;
- Consistency between airspace management, air traffic flow and air traffic services;

¹Commander conf. univ. dr. Vasile BUCINSCHI, *Study on the main aspects of airspace management in the context of Romania's Euro-Atlantic integration*, National Defense University Publishing „Carol I", Bucharest, 2007, p. 22

²Commander Gabriel Răducanu, *Romania's air safety an integral part of NATO and the EU's air safety*, thesis, National Defense University Publishing „Carol I", Bucharest, 2011, p. 69.

- Booking airspace based on actual use and for limited periods of time;
- Applying the concept to be beyond national borders, for cross-border activities.

Major requirements of the two major airspace users mainly concern environmental protection and passenger comfort, on the one hand, and the need for training for specific operations of airspace defence, on the other.

Nationally, in Romania, civil-military cooperation was and is an example for the Member States of the European Civil Aviation Conference (ECAC). Specific procedures and their implementation were achieved between civilian and military aviation authorities in a short time with the contribution of specialists from the Air Operations Centre and ROMATSA.

The strategic objectives in the area were designed and implemented along with defining the organization and functioning framework of the Council for Airspace Management, structure of joint civil-military work under the authority of Ministry of Transport and the Ministry of National Defence.

Single European Sky – SES

To operate the flight in complete safety, the European Commission proposed a legislative package on Air Traffic Management covering legal aspects, economic, safety, environmental, operational, technological and institutional aspects of aviation. This package obliges all airspace users, civil and military alike, and those interested in air traffic control, to make restructuring of air traffic in the European Union possible in order to increase flight safety.

Through the adoption by the European Parliament and the Council, on March 10, 2004, of the four regulations underpinning the harmonized regulatory framework concerning the creation of the Single European Sky (SES), the regulatory function in the area of air navigation services provided to general air traffic, was transferred from a national level to the Community institutions.

In fact, the Single European Sky project was launched in the 90s, to remove national barriers. A first package of measures was adopted in 2004 (SES 1), but as the results were not as expected, the project was updated in 2009 through SES 2 that wanted to accelerate the reform of air navigation services by including mechanisms based on performance. This regulatory comprehensive framework significantly stimulated restructuring of European airspace and the provision of Air Navigation Services (ANS), requiring, inter alia, separation of regulatory functions from the provision of services, greater flexibility in the use of airspace by the civilians and the military, interoperability of equipment, harmonized classification of the upper airspace and a common charging NSA scheme and common requirements for licensing of air controllers, also setting the essential elements that form the structure of the single European sky.

Applying SES is greatly advantageous: compared with 2004, the SES initiative (once completed around the year 2030 to 2035) could triple airspace capacity, halve ATM costs, improve safety tenfold and reduce the impact of aeronautics on the environment by 10%.

Romania is directly involved and interested in the benefits of implementing SES, the European Parliament Information Office in Romania hosting the annual debate „Single European Sky: airspace effective and efficient“.

The events bring in debate the Proposal for a Regulation of the European Parliament and of the Council for implementation of the Single European Sky through involving key institutions and organizations in the aviation sector in Romania, both civilian and military, and other EU Member States in a direct dialogue with the European Parliament rapporteur. The issues discussed in the debate stress the importance of the topic for the Romanian

authorities and the support for further punctual deliberation. Some of the main points achieved: the role and importance of implementing the Single European Sky in strengthening the European internal market, showing that SES means fewer emissions, less time flying, a better air traffic control structure and multiple benefits for passengers. Air Traffic Management in the European Union is based on an architecture built on national borders that still exist in the air, although they disappeared on the ground. Air transport contributes to the economic development of the EU, and it must be developed so that it brings common economic benefits.

SES initiative requires Member States to cooperate in European airspace reconfiguration in functional blocks of cross-border, based on operational requirements, in particular traffic flows and not the current division of airspace in control areas and flight information on national criteria, aiming thereby to increase flight safety and traffic capacity, cost efficiency due to the supply of air navigation services and minimizing the flight impact on the environment.

In the context of an accession to the SES program, Romania, through Romanian Air Force General Staff and ROMATSA - Romanian Air Traffic Services Administration and Bulgarian Air Force General Staff and BULATSA - Bulgarian Air Traffic Services Administration initiated and completed the creation of a common FAB (Air Functional Bloc) during 2015, by decision of the Danube FAB Council of Government, also finishing „the coordination procedures for the provision of air services in the area of common interest". This allows both countries to improve air traffic efficiency. Therewith, by decision of the Danube FAB Government a Danube FAB Strategic Program for the period 2015-2019 was adopted, and on a national level, ministers of transport and defence signed the common order establishing joint border sectors within the functional airspace bloc „Danube FAB".

Within SES initiative, ATC regulation requires a more integrated airspace management, complemented by the development of new Air Traffic Management concepts and procedures. Airspace will be considered a shared resource for all users who require flexible usage, ensuring fairness and transparency upon taking into account security and defence needs of Member States and their committees within international organizations. Therefore, these countries have declared their willingness to cooperate, taking into account national military requirements, for the purpose of total and uniform application of FUA concept in all Member States and by all airspace users.

What is observable is the attention paid to the ever increasing needs of the execution of military missions in fulfilment of performance goals of the Single European Sky, Declaration of EU Member States on military issues related to SES accompanying Regulation (EC) no. 549/2004, stating that: „civil-military cooperation and coordination should play a fundamental role in implementing SES in order to progress towards an enhanced flexible use of airspace, but to achieve the performance targets, attention should be given towards the effectiveness of military missions".³

Implementation of the Single European Sky is a key priority of European policy in the field of civil and military aviation, which aims to increase the overall efficiency of the way in which European airspace is organized and managed, by modernizing the current system of air traffic management, in order to ensure safe air transport, fluent and sustainable in the medium and long term.

³excerpt from Regulation (EC) No. 1070/2009 - on improving the performance of European aviation system

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CONSIDERATIONS REGARDING THE NEED FOR THE USE OF UNMANNED SYSTEMS IN THE NAVAL FORCES OPERATIONS

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Abstract: *The development of cutting-edge technologies showed such a growth pace unprecedented until now. The results obtained are so complex that, not only do they inevitably influence both the conceptual approach of the typology and specificity of the combat environments, but also the complexity of the means designated for the combat in each of these. On the other hand, the characteristic of discontinuity of the front lines, sometimes even the impossibility of the concrete exemplification of them, the multiplicity of forms of manifestation of violent actions, military and non-military, have imposed the need for more detailed knowledge about the specific traits of those areas, and real-time monitoring of the actions and forces involved, generating and fuelling thereby the need for technological development. Moreover, the additional requirements implied, the need to ensure early warning, the completion of the common operational picture (COP), the desideratum to avoid collateral damage, and of the unnecessary loss of human lives have continuously forced the deployment and utilization of cutting-edge technologies in the military area. But, referring strictly to the essential capabilities which a credible naval force must have, as an expression of this spectacular technological developments, the detaining and use of the unmanned systems (US - UAS/USS/UGS UUS) and of their associated platforms, the unmanned aerial vehicles (UAV), unmanned surface vehicle (USV), unmanned ground vehicle (UGV), unmanned submarine vehicles (UUV) and/or autonomous underwater vehicles (AUV), must surely be some of them.*

Keywords: *cutting-edge technologies, credible naval force, unmanned aerial vehicles, systems without human personnel on board, common operational picture, early warning.*

"Knowledge is change" — and accelerating knowledge-acquisition, fuelling the great engine of technology, means accelerating change", [Alvin TOFFLER, Future Shock]¹

Introduction

The interest for the development and use of means of the combat using unmanned systems in particular means or air platforms was first mentioned in 1849², when Franz von Uchatius, at that time a young lieutenant in the Austrian artillery, had the idea to use "The Austrian balloon", loaded with explosives, in order to execute a surprise attack on Venice³. The factor which generated this solution to hit the targets on the coastal area from locations on the open sea had been given by the impossibility of the execution of an effective strike using the artillery pieces existing at that time on board. Although the effect was not obtained as expected, it is worth noting that it caused the adversary to surrender. Subsequently, for

¹ Alvin Toffler, „*Future Shock*”, published by Bantam Books, Inc., 1971, p. 25

² Finding Dulcinea Staff, *On This Day: Austria Drops Balloon Bombs on Venice*, available at: <http://www.findingdulcinea.com/news/on-this-day/July-August-08/On-this-Day--Austria-Rains-Balloon-Bombs-on-Venice.html>, consulted on: 03.02.2017

³ Wikipedia, *History of unmanned aerial vehicles*, available at: https://en.wikipedia.org/wiki/History_of_unmanned_aerial_vehicles#The_Austrian_balloons, consulted on: 07.02.2017

several decades, a series of tests or similar attempts, supported by continuous research and technological innovations, led to the development of such systems by several states⁴, particularly the USA. Some of them were used during the two World Wars and part of them continued the improving process to such an extent that now they have reached some of the most notable results. However, the reference year for the use of the unmanned aircraft (UAV) remains 1982⁵. That year remained in history as the year of the first use in a military conflict of the UAVs. That year scored the using of UAVs by the armed forces of a State for the first time, in order to collect data and use their means into the opponent's territory in order to destroy targets of major interest. At that time, Israel used UAVs to gather sensitive information about the Lebanese forces, during the existing war between them. Many of the further technological processes and manufactured products have evolved so much that the existing unmanned aerial systems (UAS) are integrated systems that have the capabilities needed, based on which, depending on the type of construction and their destination are able to ensure recognition, surveillance and target acquisition (RSTA), in a wide spectrum of the areas of responsibility in which they can be distributed. Because of these capabilities and the newly reached performances, the obtaining RSTA through the use of UAVs tends to become a real concern also for the Navy. Therefore, taking into account the specificity of the Naval Forces and communion of combat environments in which simultaneous structures from their composition have to execute specific missions, the establishment of subunits of unmanned systems (US) in their organic starts to become a desideratum. Through its materialization, ensuring the early warning (EW) and strengthening the common operational picture (COP), add a capability essential to those through which it is accomplished to avoid surprise and can increase the capacity for keeping the initiative. Also, because the current platforms which are part of unmanned systems (US), such as UAV, UUV⁶, UPS, UGV and AUV, may act not only as ISR sensors, but also as platform carrying weapons or vectors from the most various, it can be concluded that their use in the operations of Naval Forces tends to become more than a necessity.

The implications of the use of the Unmanned Systems (US), in the ISR and in the accomplishment of the COP

From the desire to focus under a general designation all systems in the composition of which shall enter different types of unmanned vehicles, we have chosen to use in the framework of this material the acronym US. The command and control of these vehicles which are entering in the composition of the unmanned systems (US), may be exercised as the case remotely via a control stations located in another location which differ by the area of mission, can be moved in standalone mode after a plan elaborated prior to the introduction of them in the mission, or may have some complex dynamic automation systems. They are particularly used for a series of missions, among which the most important are those of recognition and/or engagement of dedicated targets. Depending on the fighting environment for which they have been designed, they can also ensure the collection and the provision of essential data from the concerned, or connected fighting environments, with reference to the

⁴ General (ret.) dr. Ion Magdalena, *Sistemele de avioane fără pilot în România*, available at: <http://www.rumaniamilitary.ro/sistemele-de-avioane-fara-pilot-in-romania>, pagină consultată la data de: 15.02.2017

⁵ Marius Comper, *Drona – „ochiul din cer” care vede tot*, disponibil la, <http://www.descopera.ro/stiinta/9249085-drona-ochiul-din-cer-care-vede-tot>, seen at: 07.02.2017

⁶ România Liberă, de Mihai Diac, *Armata a lansat prima DRONĂ subacvatică de construcție românească*, available at <http://www.romanialibera.ro/stiinta-tehnologie/stiinta/armata-a-lansat-prima-drona-subacvatica-de-construcție-romaneasca-388796>, seen at: 10.02.2017

location, arrangement, capabilities and even the intentions of a potential enemy, related at intelligence domain, surveillance, targets acquisition and recognition (ISTAR). The integration and correlation of them with information coming from various other sources, their processing and dissemination of timely, will provide the needed informative support for the command structure, in the decision-making process. By the integration of specific informative products of ISTAR, and disseminating these in a format that allow the use of available modalities graphical display of information with an operative level, may realize the Common Operational picture (COP). In that way is provided both detailed knowledge of the situation and also the response to meet the needs of information essential to implement the tasks at all levels. Considering the current geopolitical context, the nature and the military capabilities potential developed by some non-NATO countries, bordering the Black Sea, a possible increase in interest in the Navy from countries in the region, setting up of subunits UAS organic and equipping of platforms from their composition with UUV⁷, USV and AUV appears to be justified. In the current regional conjuncture, especially for the Naval Forces, must be initiated some supplementary efforts not only towards achieving the COP, but also to implement and the concept of Command, Control Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), ensuring a high capacity for early warning and integrated action, in order to establish the appropriate response measures. In recent years, at the level of countries that have invested in developing defence capability and reaction, the usage of unmanned systems (US) as a result of their involvement in many various actions, military, non-military and civilian, have demonstrated their usefulness regarding the involvement in the operations framework. For any Naval Force, to hold any UAV subunits with short-range and/or medium-range of action, in their organizational structure, and in addition USV, respectively UUV on board of its ships, would constitute a qualitative leap in the development of its ISR architecture and for involvement of its specific means. The existence of such systems still represent a major challenge, requiring the development of a concept for defining the role, of their specific tasks, identifying specificity mode of operation and steps/responsibility for ensuring their maintenance. For UAS for example, must be taken into consideration a number of technological issues, such as ensuring secured communication lines, optimal bandwidth for data packets transfer, a powerful software for image processing, video equipment, radar synthetic aperture (SAR) for positive recognition of any target and objective of interest, sufficient autonomy to fulfil the full spectrum of missions, dedicated capabilities for unmanned aerial vehicles, in order to be driven from the ground accurately, and to allow the emergency planning for flight to be done automated. In addition it would be preferable to be able to operate in hostile environment and not least, to have the technical capabilities, dedicated, for refuelling in flight⁸. Depending on the constructive type of UAV system, embarked on board of ships, located on ground bases, or used for support in different areas of operation for specific missions, the type of information collected and possible hitting capabilities will be substantially different. At the level of countries like the USA, the newest approaches of full range of future missions, already are putting on the main place the unmanned systems (US), among the means intended to provide comprehensive knowledge regarding the situation evolution from area of operations.

Continuing concerns directed to improving their capabilities, to increasing endurance and for diversification of modalities which are making them able to assure through their

⁷ Heiko Borchert, *Catch of the day: Reflections on the Chinese Seizure of a U.S. Ocean Glider*, available at: <http://blog.navaldrone.com/2016/12/catch-of-day-reflections-on-chinese.html>, seen at: 11.02.2017

⁸ *Autonomous Vehicles in support of Naval Operations*, available at: <https://www.nap.edu/catalog/11379/autonomous-vehicles-in-support-of-naval-operations>, pagină consultată la data de: 15.02.2017

involvement, the support needed and main capabilities to provide the force protection⁹, are imposing existence of the unmanned systems (US), at level of all categories armed forces of the future. Whereas the degree of fulfilment of assigned tasks for the Naval Forces depend especially to the quality of joint intelligence preparation of the battle space (JIPB), the use of UAV, USV and UUV means in support of the ISR will ensure inflow of useful data, not only for an comprehensive analysis of the specific and limitations determined by the characteristics of the area of operations, but also to sustain the effort of determining those elements / aspects, such as those necessary for early warning, force protection and possibly to engage potentials threats beyond the coverage area of the vectors which are already on board ships. The advantage of using UAV, UUV and/or USV in some sensitive areas and under hydro-climatic unfavourable condition, in order to enforce surveillance, recognition and data collection of informative interest, if are compared with the use of manned platforms, for the same purposes, then in case of unmanned vehicles (UV) involvement, both risks and costs are significantly reduced. Also UAV, UUV and/or USV, are characterized by a much greater flexibility and reliability during their use into the missions. However, use them in different particular situations is not eliminate the need for participation of manned platforms at operations. Moreover, while development of unmanned systems (US) will be in evolvement, will be necessary to be identified and strengthened the ways of interaction among all of them, and to foresee all related aspects of ensuring a functional C2 chain, keeping in mind the specific conditions at the time of operations. The technological leap known in present, not only ensures an unprecedented development of a wide variety of unmanned systems (US) but also directs research efforts towards achieving interoperability and integration of systems C2 specific, so that vehicles from the composition of these may take significant role in areas of action, and also can be integrated so that the data supplied may ensure achievement of common operational picture (COP). Achieving such a COP it will ensuring the decision-making process improvement and will raise the level of effectiveness of missions¹⁰. taking into account the specific operations of the Naval Forces, whose deployment takes place simultaneously in fighting environments: surface, underwater and air, evidenced by complex actions with a high degree of risk and in which, the limitation of unnecessary loss of life, the elimination collateral damage possibilities or the danger of the fratricide is essential, we estimate that the endowment with unmanned systems, or a support provided through them, should be seriously considered for the states that have not had in their attention, although they have access to all ocean and sea over all the globe.

Opinions regarding the usefulness of the use of the UAV, UUV and USV in the Naval Forces operations

Taking into consideration the Naval Forces of a state like Romania which has access to the sea, to navigable channels, river branches, and in addition has a lagoon area relatively extensive, the special use of some types of UVs is justified mainly by the need of fulfil its specific requirements in achieving the ISR. On the other hand, the current fluctuation from the regional security environment does not exclude a future occurrence of some situations which should place structures composing Naval Forces in a hostile environment. This is mainly due to the extension of areas covered by anti-access and area-denial systems (A2AD), which are belonging to neighbouring states and which can become potential adversaries, without any prior warning. Acting inevitable in this restricted environment, characterized by an uncertain stability, is forcing consequently the Naval Forces to identify and implement optimal measures and to define the steps needed in order to assure the early warning and the readiness

⁹ IHS Jane's Defence Weekly, *US Army's future unmanned systems to prioritize situational awareness*, volume 53 issue no 44, 2 november 2016, p. 11.

¹⁰ Courtney Howard, Military & Aerospace Electronics, *Flexible & integrated unmanned command & control*, available at: <http://www.militaryaerospace.com/articles/print/volume-24/issue-11/special-report/flexible-integrated-unmanned-command-control.html>, seen at: 09.02.2017

to give a rapid and effective response. One of the main solutions may be to tackle seriously the right ways for consolidation of ISR capabilities, and if possible the acquisition of several types of unmanned vehicles (UV). Using the acronym "UV" in this material we understood that we are referring to any specific means such as UAV, UUV, USV, respectively AUV. In this sense, for those forces which are executing activities on coastal and lagoon area, may be allotted UV's, with short-range, small and medium sizes, depending on the depth of the investigated/researched area. For all actions that will involve forces and means deployable into arranged districts or by the case, undeveloped, where appropriate, particularly in lagoon, and proximity of important river areas, and also over the sea up to the EEZ, may be allotted medium-range UAVs, equipped with ISR sensors or even loaded for hitting the targets assigned through ISTAR processes. It also for those forces which develop missions in the river environment is necessary to allocate AUVs capable to detect mines and other underwater hazards on fairways, and/or UAVs that provide surveillance capabilities also into lagoon area or other areas which are difficult to be transited of forces and other military means. At sea, additionally of the support assured by embarked UAVs and/or by those with medium and large radius of action assigned, it is important to use various types of UUV, given the existing submarine threat in the Black Sea, and especially the existing vectors carried by them on board. Naval Forces can also to benefit for example of a wide variety of USVs that can be used starting from mines detection, until interception and monitoring of electric powered submarines, that might operate in coastal areas and beyond in the open sea. Benefiting a remarkable efficiency and high degree of autonomy, these UVs which are designated in support of the naval forces have the main advantage given by a freedom of manoeuvre which allowing them to fly in areas under A2AD systems coverage, without becoming potential targets whilst reducing also the potential risk of confrontation or human life loss. Introduction of the unmanned systems (US) as an essential support for all branches of armed forces, must have as solid base an operation concept (CONOPS), dedicated especially to them, developed by that category of armed forces for which will be designed, in close relationship with the specific future missions which would be allocated to them. It is also necessary to develop a plan for medium and long-term acquisition and a prioritization of acquisition according to importance of them, and of allocating tasks to be distributed. Whatever combat environment in which will evolve the UVs designed for naval forces, they will do actions, in common or in support of missions allocated to manned platforms, or will perform specific tasks independently. Whatever the type of unmanned vehicle to which we refer, UAV, USV and UUV, they all have in common as a main task, ISR. Depending on the mounted and available sensors systems on board UVs, these can collect data from electromagnetic emissions spectrum as non-communications (ELINT), communications (SIGINT) regarding combat environment (JIPB), data on fingerprints acoustic or others (MASINT) and related to images (IMINT). For assessing the appropriateness of use by naval forces of UV during naval operations, we will consider some of the potential missions that could be executed by these. If we were to analyze the usefulness of UVs in relationship with the combat environment, which should be assessed as common both for USV, and also for the manned ships, the potential missions¹¹ that may be assigned for USV can be: deduced from operations C4ISR, the deception (MD), information (IO), electronic warfare (EW), above water warfare (AWW), anti-submarine warfare (ASW), fighting mines (MCM), attack / support seaward (GS / A), air defence and missile defence (AMD), search and rescue (SAR) and also the logistical support.

We can estimate that USV among all of the UVs, are on the one hand, those platforms that can provide the best conditions to carry equipment, sensors and weapons, but have an autonomy noticeably reduced in comparison with UAVs, and on the other hand does not have

¹¹ Scott SAVITZ, Irv Blickstein, Peter Buryk, Robert W. Button, Paul DeLuca, James Dryden, Jason Mastbaum, Jan Osburg, Phillip Padilla, Amy Potter, Carter C. Price, Lloyd Thrall, Susan K. Woodward, Roland J. Yardley, John M., Yurchak, *U.S. Navy Employment Options for Unmanned Surface Vehicles (USVs)*, National Defense Research Institute available at: http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR384/RAND_RR384.pdf, seen at: 08.02.2017

the same capabilities of action in secret like UUVs. However, the opportunity for involving USVs is larger and depends on the environment it is intended to execute their missions, environments which can be permissive, restrictive or hostile. Correlating the nature of the environment in which operates at a time USVs, with potential types of naval operations mentioned above, we can identify a number of tasks that may be performed by them. For example, if the environment is permissive, the ISR missions may be oriented mainly to realize a complex collection of data about specific objectives of interest, or data collection about the specifics and peculiarities related of area of naval operation. Missions carried out by the USV in a permissive environment, other than ISR, can be aimed at: the deceit, the masking of some manoeuvres or intentions, identifying or discovering forces composition and their disposition into the area, for reaching all of these using elements from EW domain. They can also execute missions such as discovering and neutralization of mines, monitoring actions or counteracting of fast boats, underwater search to discover potential threats, may play the role of communication node, assuring the relay station role or for interception of any signals collected from different underwater or surface sources. From the point of view of the support, these vehicles can provide transportation of materials, the connection between vessels and the littoral coastline, and search and rescue missions (SAR), in order to find out and to give the aid in naval and air accidents or for victims belonging to underwater incidents. Depending on degree of endowment with arms and the nature of the environment in which they operate, which may be an permissive or restrictive one, the USVs may develop actions either for executing attacks in support of own forces, or various forms of fire support, from sea to the coastlines or at shore. Whatever combat environment from which may arise a potential threat, effective use of USV, taking under control involvement of sensors and the nature of its technical and tactical capabilities, would be provided all elements of early warning about presence and nature of these threats. But, if the areas in which they operate these USVs are subject to bans or is a hostile environment, a well-balanced equipping of them with detachable organic sensors, protective systems and attack weapons or different vectors, which can be optimized depending on the nature of the missions, could ensure independently or within naval task group the mission success. The main characteristic of USVs is that they can have variable dimensions which allow them, in contrast to other UVs, the capability to carry a large volume of sensors, weapons, or other materials. Thus, in a hostile environment they can be used as a communications relay for indication of targets beyond the horizon (OTHT), checkpoints established for early warning, or could execute a wide range of missions' electronic warfare, deception, diversion, or even it may execute attacks on some targets of interest. The essential element consists in the fact that the use of them by naval forces can be executed under coverage, and this are making them harder to be detected moreover being flexible and manoeuvrable can reach more easy the established goals, in addition eliminate the need to involve human factors in high-risk areas. Another area where naval forces could receive considerable support, to the extent that UVs can be used is related to the specificity of underwater environment magnifying glass. The complexity of this environment of combat, is given by the specifics of its three-dimensionality, which includes great variety of landforms, great biodiversity and a number of geophysical and hydro graphic specific factors. That fact imposed the necessity to conduct research and development of advanced technologies to ensure the possibility to use this medium in economic interest, energy, and even more so, for the operation of underwater manned or unmanned platforms for military purposes. In recent years, industrialized countries have developed a number of programs to increase capabilities for both research domains of underwater environment, for civil purposes and for the development of innovations into the underwater military domain, in order to be able to execute and to support naval operation in various conditions. So, there is nothing surprising in the fact that UUVs have already begun to represent an element of very high importance¹² in development of the concepts related to future underwater operations, drawn up at the level of

¹² *** Stratcore GROUP, *Next revolution in UUV*, Centre for Asian Strategic Studies-INDIA, available at: http://www.cassindia.com/inner_page.php?id=140&&task=military#, seen at: 03.02.2017

these States, and which are covering the whole spectrum of missions, starting from fighting against danger represented by mines, and going up to fighting against the threats represented by submarines and their vectors. Moreover, this planning has paid off, making possible a materializing of ideas related to advanced technology elements that are likely to ensure transition from underwater remotely operated vehicles to a new generation of vehicles fairly autonomous, with a relatively improved endurance. These capabilities will allow the future involvement of UUVs in missions such as ISR, submarine search and surveillance, C4ISR support, discovering and warning about the present dangers for navigation, surveillance, search, and monitoring in support of some submarines actions, support for Special Forces (FOS), search and rescue for vessels, aircrafts and submarines in distress, able to fulfil functions such as communications relay for submarines and other platforms, or even role of targets generator in anti-submarine warfare exercises. The use of UUVs in the oceanographic research missions, will support data collection, starting from underwater intelligence preparation of battlefield (IPB), gaining knowledge of environmental conditions in which may execute submarine search, and interception, surveillance or monitoring of them, give information about condition in which may be collected data related to MASINT, providing knowledge about condition in which should do effective mine hunting which provides also details for discover and eliminate the danger represented by layout areas of the dams, giving an obvious benefit for avoidance of exposure of the people on board of ships and submarines to additional risks. But, from between all types of unmanned vehicles, UAVs are keeping

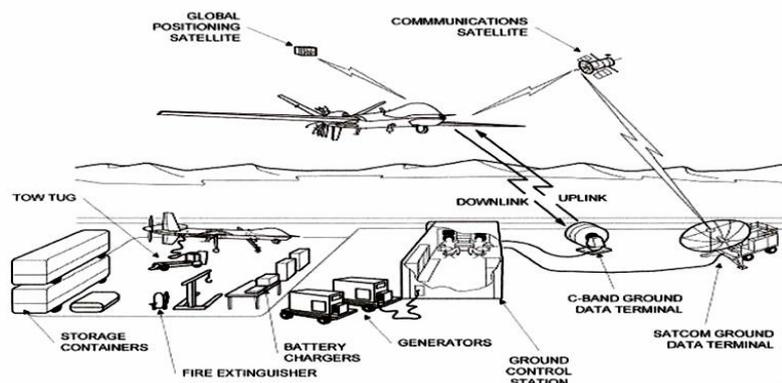


Figure 1. C2 system for UAVs

source: https://www.eff.org/files/filenode/cbp_uas_concept_of_operations.pdf,
seen at: 14.02.2015

leader position; they are the unmanned vehicles which knew the largest technological development so far. Even though a long period of time the research missions and reconnaissance were orientated to airplanes specialized, designed especially for this purpose, new results of technological evolution, related to robotics and the achievements in the field of microelectronics, are imposing UAVs, more and more often in the execution of such missions. Existing UAVs are characterized primarily by a much higher endurance in comparison with classic, planes designated for ISR missions. Lack of human factor greatly reduces the number of landings, due to natural necessity elimination, which generally is compulsory for restoring the capacity for flight to the pilots. Where staff dedicated for piloting the UAVs can rotate in established shifts at regular period of time, will enable a rapid recovering and will not affect their ability to maintain the attention during UAVs mission execution, even though it is done at greater distances from its bases. In this situation, ground control teams are operating in secure premises, benefiting generally with all necessary measures to protect forces and having available a wide range of capabilities C2. For example, in order to outline a possible representation of a C2 network for a generic type of UAV, in Fig. 1 was shown an example. The elimination of the human factor involved in the tasks of the ISR brings not only a major benefit by reducing the costs of staff and the limitation of the risks at which were subjected to their crews, but through the elimination of the personnel and

the equipment volume is reduced and as a result also the imprint of the UAV, thus allowing operation almost hidden at altitudes much higher. At present UAVs can perform a wide range of missions, which include and a part of those listed for USV, but the continuous development of these, exceeded limits of their use in EW missions or ISR, making them affordable for be loaded with weapons and/or different vectors, and in the same time able to use them in the fight, with a very high accuracy. The evolution of the research is continuous in this field, certain governmental sources or high officials are making some statements according to which, are already in research a series of solutions for fitting on board of such UAV which will evolve at altitudes of approx. 65,000 feet, a type of laser weapon intended to be used for the neutralization of the ballistic missiles¹³. The use of the UAV in operations naval forces has become a necessity, especially as a result of the current dissolution of the fronts, the lack an opponent clearly bordered, the use for the imposition of interests some combination of diplomatic habits, common law, and use of international laws at the limit of their implementation, of these resources offered by the exploitation of the cyberspace which have risen using various methods for manipulating the masses, of the pressure exerted by the migration on the background of the fall of nations and not in the last line, the terrorist actions, growing more and more violent. In the last few years, the annexation by Russian Federation of the Crimean Peninsula made as the Black Sea basin to become more populous. In this context, Romania who has like other coastal states, access to the Black Sea, and also had a larger and considerably seaside, is responsible for the use of its naval forces in order to affirm and protect its national interests. The support obtained by the naval forces through the use of the UAV in achieving the objectives of the specific missions, is significant. Not only that in this manner is assured both the early warning and the forces protection, but also shall be carried out a good knowledge of the situation from the area of operations. If will analyze the evolution of cutting-edge technologies, developing the capabilities of which they have the sensors, the current achievements in the field of automation and robotics at international level, we can assume that in future the operation areas of naval forces will generate new challenges which will be marked by a surprising evolution of the means used. This obliges us to give a considerable importance to modalities and means through which we will provide comprehensive situation awareness of the area of interest by involving UV, to ensure a better collection, processing, evaluation and exploitation of data, and to minimize exposure to some potential enemy forces. In order to ensure the optimal use of the entire range of the UV which can ensure the needs for the support of the naval forces, it is necessary to first identify the most useful of these, depending on the mission and the specificities of the evolution of the battlefield. Once these identified, it is also necessary to prioritize their purchase on the basis of a purchase plan on medium and long term. Simultaneously with this process it is necessary to develop research into advanced technologies and in related fields, nationally. The development of a concept of operations for these UVs is thereby necessary: firstly, it determines the allocation of specific missions incumbent upon them, and, secondly, it represents an integrated work module, by which the collection of useful data needed to achieve COP will be accomplished.

CONCLUSIONS

We noticed the fact that at the regional level geopolitical factors and military that define the state of facts impose the need for situation awareness in real time, the adoption of measures to ensure the early warning and timely information of the decision factors, in order to take measures for the optimal response, essential for maintaining the initiative. The qualitative leap, in securing those referred to above, provides access to the latest technology,

¹³ Mary-Louise Hoffman, ExecutiveGov, *James Syring: MDA Eyes Kill Vehicle Test in 2018, Seeks Anti-Missile Drone Tech*, available at: <http://www.executivegov.com/2016/01/james-syring-md-eyes-kill-vehicle-test-in-2018-seeks-anti-missile-drone-tech/>, seen at: 09.02.2017

knowledge of the operating procedures of it, the fulfilment of the requirements specific to the ISR and, last but not least, the establishment and dissemination of COP in real time, for all the levels of execution, planning and leadership involved. I conclude by saying that equipping the Romanian Naval Forces with means such as UAV, USV, respectively UUV is much more necessary, especially by positioning the region we stand in the area of the elements of some A2AD systems belonging to some countries which may take us in consideration as a potential opponent¹⁴. In this regard, we take into consideration those opinions based on which the future naval operations will not depend especially on the power held by a naval force, but more than that, they will mainly depend on the quality of the decisions made¹⁵. This desideratum can be fulfilled in particular on the basis of the data obtained through advanced capabilities for collecting, the processing capacity, the analysis and evaluation process, elements of naval forces that will give the best solutions to provide critical target acquisition and the effective coordination of actions.

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¹⁴ Capital, de: Radu Cazan, *Rusia: România este o „amenințare clară”*, available at: <http://www.capital.ro/rusia-romania-este-o-amenintare-clara.html>, seen at: 10.02.2017

¹⁵ Abhijit SINGH, *Unmanned and Autonomous Vehicles and Future Maritime Operations in Littoral Asia*, available at: <http://www.orfonline.org/research/unmanned-and-autonomous-vehicles-and-future-maritime-operations-in-littoral-asia/>, seen at: 05.02.2017

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THE POTENTIAL IMPACT OF THE A2AD CAPABILITIES EXISTING IN THE BLACK SEA REGION, OVER THE OPERATIONS OF THE NAVAL FORCES BELONGING TO THE STATES LYING INSIDE THEIR AREA OF INFLUENCE

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Abstract: *The current state of unstable equilibrium, caused by the turmoil in our close vicinity, has generated various effects against EU cohesion and some various forms of pressure on some of the young democracies of Europe. The degradation of the regional security environment is occurring slowly, but continuously and omnidirectionally through a subtle and simultaneously impairment of the political, cultural and economic spheres. The breach of customary international principles and rules that seemed to be intangible is achieved by hostile actions in cyberspace, diplomatic subtleties, using media techniques of manipulation, mainly to subvert from inside, the rule of law. To these are added other issues that cannot be effectively catalogued as being asymmetric, explicitly as terrorist acts, or elements of the hybrid war that seem to be more elaborated combinations thereof, directed to a well-defined end. In this context the Russian Federation's intention to develop and strengthen its regional capabilities – the Anti-Access Area-Denial (A2AD) - is not any surprise. Moreover, the use of A2AD specific weapons, as a way of countering the threats generated by a superior enemy was itself an issue, tackled by the defense doctrine of the former USSR. The novelty aspect is that even without a real enemy at regional level; the Russian Federation has transferred and consolidated, in the recently occupied Crimean Peninsula, a considerable number of A2AD capabilities. Through them not only may it exercise a certain pressure, but also a latent but real threat upon the states from the eastern proximity of the Black Sea basin. It is also worth mentioning that by having the necessary capabilities it might be able to impose at regional level too, a possible limitation of the freedom of navigation.*

Keywords: *unstable equilibrium, regional security, Anti-Access Area-Denial (A2AD), Black Sea basin, freedom of navigation.*

Introduction

The Black Sea basin was and continues to be an area of influence in which the temporary status of the regional balance has been disrupted by the expression of the economic interests of political or military some of the riparian States. Regardless of the role of aggressor or damaged side which they sometimes played, the scene of emergence and evolution of the resulting tensions has been in general the Black Sea. Reporting the geographical position of Romania to the entire surface of the old continent, we can say that this is situated near the center of Europe¹. Although Romania has access to the sea and the river, a relatively extended seaside, as well as ports that can perform multimodal transport, and still has varied and tempting resources, it unfortunately had sometimes the misfortune to position itself in dissonance with the situation at regional level. Generally, the reasons for these situations are internal and made Romania vulnerable sometimes, favouring its involuntary involvement in a series of regional imbalances which have occurred over time in this area. The EU membership of Romania, the status of a NATO member state, and the development of the strategic partnership with USA, have generated some relaxation and economic growth, also changing the orientation towards a democratic system and its implementation at national level. Although it seemed that the post-Cold War era was ended, and the efforts of relaxation, the relaunch of economic, political and even military relations between the West and the East

¹ Ana-Maria Ene, *Poziția Central Europeană A României*, available at http://www.e-scoala.ro/geografie/pozitia_central_europeana_romania.html, seen at: 02.02.2017

were about to materialise, the annexation of the Crimean Peninsula by the Russian Federation and the beginning of the eastern Ukraine conflict have caused a new escalation of tensions between the West and the East, represented by the Russian Federation.

The current state of regional instability which is based mainly on a complex combination of factors such as the BREXIT, the pressures generated by the waves of immigrants and emigrants, many forms of current acts of terrorism, have influenced and have had a most negative impact on the capacity of maintaining EU cohesion and the positive development of a majority of states in the region. In this context Romania becomes and must assume the role of the eastern border of EU and NATO, all responsibilities arising from this. This is more obvious especially now, when some conditions are arising which favour trends for political reorientation in some neighboring countries². In addition, the evolution of the situation in Turkey is still unclear, frozen conflicts existing in the proximity, and, last but not least, the effects of the revisionist attitude and actions of the Russian Federation which wants become the main player at regional level and not only. The Crimean Peninsula annexation and the deployment in that peninsula of a very high volume of equipment and offensive fighting means in order to realize and develop more efficient and convincing capabilities of anti-access and area denial (A2AD), have had a negative impact over the neighbouring countries, located within the range of those means, a situation generating a considerable degree of discomfort at regional level.

The nature of the capabilities of the anti-access and area denial (A2/AD) of the Black Sea, and the potential areas of risk arising from their specific coverage

Romania, by nature of its political orientation, its Euro-Atlantic community membership, the specific agreements, treaties and undertaken partnerships, as well as its geographical position, lies in the easternmost border of the EU and NATO. As a result, one of the assigned missions of the naval forces is the monitoring of the situation developments in the Black Sea region, in order to ensure the early warning and useful information, needed at operational decision-making level. The occupation of the Crimean Peninsula, its super saturation with troops and military equipment by the Russian Federation and, not in the least, the assessment by some Russian officials, referring to some NATO countries³, generated a lot of tension and uncertainty in the region. All this led to the Black Sea area gradual transformation, from a quiet area of free trade and the germ of economic development at regional level, to an area of explorations between east and west, a new manifestation of a new and more complex stages of a new type of post-cold war. As expected, the connection between action and reaction caused a cyclical effect, as in any system. In that manner the consolidation of A2AD capabilities by a state, will generate, even though only as a precaution, sustained effort from another state or coalition of states to find out a solution to counter them. The realization of A2AD capabilities is primarily based on a conceptual approach. Due to this, the results of conceptual approaches implementation could be materialized, identifying the main modalities for involvement of specific forces and means in order to prohibit access of a potential adversary/enemy in a default zone (A2) and/or limiting its freedom of movement in a particular medium or area of operations (AD), a concept known as "Anti-Access & Area Denial" A2AD.

² Sorin POPESCU, AGERPRES, *Schimbarea politică din Republica Moldova și Bulgaria, un eșec pentru UE (Le Monde)*, available at: <https://www.agerpres.ro/externe/2016/11/15/schimbarea-politica-din-republica-moldova-si-bulgaria-un-esec-pentru-ue-le-monde--19-25-41>, seen at: 07.02.2017

³ Carmen ȘTEFAN, CLIC, *Vladimir Putin, amenințări dure la adresa României*, available at <http://www.click.ro/news/lume/vladimir-putin-amenintari-dure-la-adresa-romaniei>, seen at: 23.02.2017

The development of A2AD capabilities by the Russian Federation inside the Crimean Peninsula may have an important impact on the freedom of manoeuvre of ships belonging to other littoral states; a similar impact could be felt by some vessels belonging to NATO member states, during their involvement in specific joint activities with local partners in the Black Sea area, located in the vicinity of the Russian Federation zone of interest. Also, a potential or certain intention to use these capabilities can pose a threat on merchant ships freedom of manoeuvre, and even over free access to any kind of resources or oil platforms inside the limits of own exclusive economic zone (EEZ). The use of A2AD capabilities, in order to impose the will in certain areas of interest in order to obtain supremacy over resources or to deny access to different areas which are under this means coverage is not a new thing. New is mostly the technology used to make their technical and tactical capabilities, precision and especially extended rays of their influence. We can enter into the category of A2AD capabilities, long range ballistic missiles, cruise missiles and C2 systems related to them. Also in this category of warfare means, also enter target acquisition systems, guided missiles, integrated air defense, weapons systems for close defense (artillery, missile short and medium-range), submarines, ships and aircraft with different kind of weapons systems and on board specific vectors, weapons of mass destruction and their dedicated carrying platforms, unmanned vehicles able to be involved in a wide spectrum of missions, sensors and capabilities of electronic warfare, cyberspace specific means.

In addition, we can add related methods or actions which can be used for loosening and disruption an opponent, and/or other specific aspects other than war/atypical kind of war, whose action takes place "fronts underground" and cannot be charged mainly because they occur at the limit of legality or are the result of skilfully handling approaches and traditional diplomatic customs use. They also include among other elements of hybrid war, asymmetrical actions and sabotage, use of terrorist networks, manipulation of the masses through media or social networks.



Figure 1. Source: *Russian military aggression against Ukraine presence of the Russian armed forces on the occupied territories of Ukraine – Autonomous Republic of Crimea and city of Sevastopol - May 2016*, available at <https://www.slideshare.net/EmbassyUkraine/ppt0000003-61701174>

Therefore, we consider that A2AD components deployed in Crimea appreciably affect the execution of naval forces operations in the Black Sea. That approach is based on the existence of capable missile systems and dedicated vectors or other specific components in support of them. This means are either in inside Peninsula locations or on

board of submarines, ships and aircrafts who fly fully areas, and are able to cover extended areas where the merchant vessels may have free trail, or naval forces components of some littoral states execute different missions independently or jointly with other partners. A graphic illustration of coatings A2AD systems deployed in Crimea is shown in Figure 1. Starting from these considerations we estimate that the components of the A2AD deployed in Crimea should considerably affect the mode in which riverine naval forces may execute their operations in the Black Sea. The main existing A2AD capabilities in the Black Sea which are

influencing the activities of vessels which execute missions in default areas in the Black Sea, and belong to riparian states should be mainly divided taking in consideration the potential threat represented by the means and their disposition.

So, talking about anti-access (A2), the threat is represented, usually, by systems with long-range missiles that are directed against air and naval components of an opposing force that are trying to force entry into a forbidden area. From the specific action regarding A2 may be part also specific actions directed against communication satellites, or GPRS systems, EW offensive actions, or cyber attacks. In order to limit the freedoms of the manoeuvre in various areas of operations (AD), depending on the surface covered by them, the threat may be represented by on board artillery systems, small radius missiles systems, and all support given by specific EW measures and actions.

The systems intended by the Russian Federation for the completion of A2AD in the Black Sea region are deployed most of them in locations situated inside Crimean Peninsula. But we cannot exclude the possibility that all of this may be supplemented by inside country, depending on the needs, in order to enhance the capacity to deliver a timely response with newest fighting systems existing on board ships, aircrafts or submarines, newly relocated in this region.

The ships of the Russian Federation Black Sea fleet shall have already functional missile systems that can ensure a field coverage between 40 mm (SS-N-14 SILEX)⁴, reaching even over 900 Mm⁵. Some of these vectors also having the possibility to carry nuclear warheads.

Ships have also a series of artillery systems with effective impact range, somewhere between 5 and 23 km. A capable fight component of A2AD systems are the new class of submarines. These are fitted with "KALIBR" on-board missile launching systems with a wide spectrum of action, provided by type SS-N-30A SAGARIS, respectively SS-N-27A SIZZLER.

In addition at these, submarines can be loaded with antisubmarine missiles, torpedoes, anti-submarine bombs and other different types of means, held in the present. Until now, based on known data, the antisubmarine fighting systems rays of the action are ensuring areas of impact between 350 m and somewhere up to 30Nm.

This complex of means and allocated forces in purpose of ensuring A2AD at regional level incorporate also ant air fighting system and means dedicated to counter almost any potential threats that come from this fight environment.

These systems may also be located in fixed position or fitted on platforms which can be deployed anywhere within Crimean's territory by the pleasure of Russian Federation. There are already in place dedicated missiles systems to counter the air attacks and missiles launched by a possible aggressor.

⁴ *** SS-N-14 Silex, RPK-3 Metel/RPK-4 Musson, available at: <http://www.globalsecurity.org/military/world/russia/ss-n-14.htm>, seen at: 13.02.2017.

⁵ James JELANI, HNGN's, *Russia's SSN-30A: New Missile Capable Of Targeting Majority Of Europe*, available at: <http://www.hngn.com/articles/121933/20150822/russias-ssn-30a-new-missile-capable-targeting-majority-europe.htm>, consultată la data de: 13.02.2017.

In order to counter a various air threats, the A2AD system, has large spectrum of missiles whose range varies from 4 km (SA-N-5 Grail)⁶ to approx. 400 Km (SA - 21 Growler)⁷. As exemplified in Figure 1, in the peninsula are deployed a series of mobile defense systems along coastline. Among those, I will stress on missile type SSC-5 Stooze⁸ which have an operating range between 350 kilometres (against targets represented by floating platforms) and approximately 450 Kilometres in the case of the targets situated in fixed locations on the ground⁹. At all of the above shall be added, air support dedicated aircrafts, radars as and various electronic warfare technical means, which was revitalized¹⁰ in Crimea, in the almost three past years. Air component involved in ensuring A2AD, can be found on the one hand in the air bases in Crimea, and on the other hand this may come into

support from any other location from the territory of the Russian Federation. These aircrafts involved in the A2AD appertaining both to the naval aviation deployed in the south military region, either of the aerospace forces dedicated for survey missions and readiness defense response, in particular those already reallocated in the peninsula. In Crimea are operative¹¹ a number of military destination airfields, which mainly have been used in the past two years, Belbek Kacha, Sacky, Hvardiyeske, respectively Dzhankoy. In the peninsula, within the framework of the air bases referred to above are operative different types of aircraft with fixed and rotating wings, which can develop a wide range of missions, and which also provide for the armed forces and a sufficient radius of autonomy. These can operate both in near-coastal areas and in any area of the Black Sea, Figure 2. The variety shall cover a range of specific missions such as: interception and air defense, attack on the vessels and/or of the targets on the ground, the ISR, air support, bombing, maritime patrol in the purposes to discover and employ enemy submarines, air support mission in benefit of own forces acting on the ground, and last but not least the different actions from de field of electronic warfare.

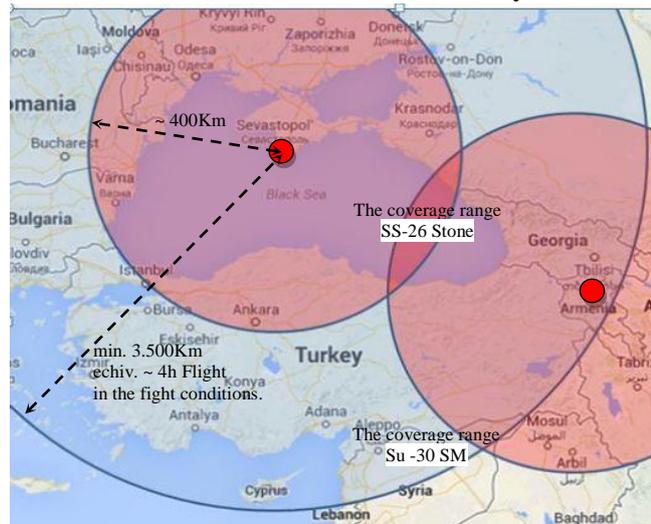


Fig. 2. Processed after the source: Cristian UNTEANU, available at: http://adevarul.ro/international/europa/provocari-majore-desecuritate-zona-marii-negre-acumulare-precedent-arme-conventionalesi-armament-nuclear-temeri-statistici-analize-1_55c19e69f5eaafab2c40b131/index.html - 5 august 2015

⁶ *** SA-7 GRAIL 9K32M Strela-2, HN-5 (Hongying 5) China, Anza MKI – Pakistan, Ayn as Saqr – Egypt, available at: <http://www.globalsecurity.org/military/world/russia/sa-7.htm>, consultată la data de: 13.02.2017

⁷ *** S-400 Triumph Long-range air defense missile system, available at: http://www.military-today.com/missiles/s400_triumph.htm, seen at: 13.02.2017.

⁸ *** YouTube.com – Ruptly Tv, Russia: Watch these anti-ship missiles launch into the Black Sea, disponibil la: <https://www.youtube.com/watch?v=294by85-JqU>, seen at: 23.12.2015

⁹ Nicholas de LARRINAGA, Sean O'Connor, Neil Gibson, - IHS Jane's Defence Weekly, Russia reveals Bastion-P deployment, land attack role in Syria, available at: <http://www.janes.com/article/65517/russia-reveals-bastion-p-deployment-land-attack-role-in-syria>, seen at: 22.02.2017

¹⁰ *** Russia Hastily Revamps Soviet Missile And Radar Bases In Crimea, available at: <https://defence.pk/pdf/threads/russia-hastily-revamps-soviet-missile-and-radar-bases-in-crimea.459144/>, seen at: 22.02.2017.

¹¹ *** Defense express, Militarization of occupied Crimea – a threat to global security, available at: <https://defence-ua.com/index.php/en/publications/defense-express-publications/914-militarization-of-occupied-crimea-a-threat-to-global-security>, seen at: 15.01.2017

In support of the air component deployed and/or located into Crimean peninsula can act elements of the mixed aviation, from Krimsk airbase, these dedicated for ground attack and air support from Primorsko-Ahtarsk airbase or from any other airbases from inside of the Russian Federation territory. Some of this aircrafts having special destinations are ensuring early warning, C2 and routing, at the regional level, the aircraft and ships involved in naval-air operations. At all of this shall be added the long range aviation, strategic bombers, and last but not least these dedicated for logistical support and air refuelling. After the annexation of the Crimean Peninsula, the use of referred aircraft, have demonstrated the degree of pilots training and their technical capabilities, running a considerable number of specific missions with or without live firings or launching missiles, acting independently or in the framework of complex aircrafts exercises, restricting for this purpose different areas in the Black Sea and not only.

Potential influences over naval forces and their mission’s during specific activities executed in the Black Sea, into A2AD capabilities covered areas.

The powerful militarization of the Crimean Peninsula by the Russian Federation was initiated immediately after occupation of it, and that have led to an unprecedented regional threat level growth after the Second World War. Crimea becoming in that manner, a stronghold in the Black Sea area, aiming and strengthening the presence and interests of the Russian Federation in the region. The Crimean Peninsula is not only a favourable location for deployment of surveillance systems as part of other early warning system belonging to Russian Federation. Crimea represents an extremely important key position for them, at all strategic, operational and tactical levels. Forced annexation of Crimea, along ethnic and vindictive considerations, considered justified from historical point of view by Moscow, are only the tip of the iceberg, whereas the Russian Federation is no longer playing chess, they are playing GO. The need to exercise control over the peninsula was an aim of an extraordinary importance for the achievement of the critical points required for performing the plan to recover by Russian Federation the great power status, once lost. For its fulfilment, they took sustained effort to conduct without delay the new fighting technique development process and achievements, to drive forces and raising the level of their education and training, simultaneously using any EU vulnerability, all opportunities generated by regional tension relaxation, and from revival of cooperation with NATO. Moreover, the fact that this situation has evolved on the background of tensions aroused during the eastern Ukraine pre-conflict and conflict evolution, favoured destabilization of sensitive equilibrium existing at that time between the EU/NATO and the Russian Federation. The struggle done by both EU and NATO who wish to keep open the levers of diplomatic negotiation and the tangle of laws, principles, policies and treaties agreed, has diminished the capacity of Euro-Atlantic opportune response, favouring the competitor.

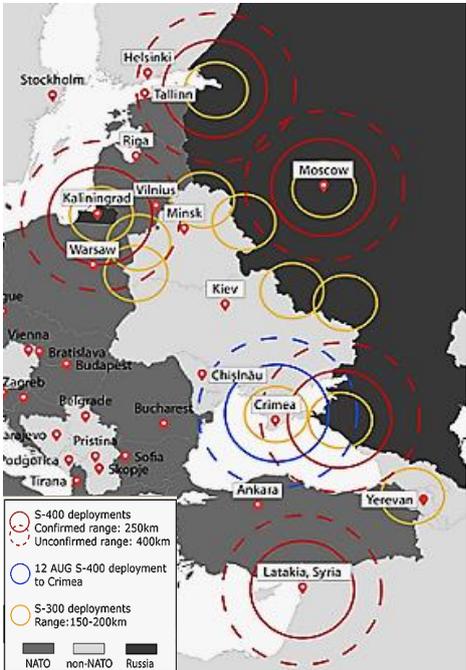


Fig. 3. Processed after the source: Loic Burton, <http://foreignpolicyblogs.com/2016/10/25/bubble-trouble-russia-a2-ad/> - 25. Octombrie 2016

This was already on the ground, having clear established objectives, and which had no intent to agree or recognize any existing or imposed the rules of game. The ambiguities of war in Syria that generated forced emigration pressures phenomenon, which suddenly have

subsequently succeeded on Europe, culminating in acts of terrorism and ambiguity of Turkey desires and orientation was also aspects exploited by the Russian Federation, which it led to revitalization of air and naval base in Syria, securing the second strategic position after the Crimea peninsula. Free access to two maritime areas where winter does not influence dramatically execution of naval operations, was a target for the Russian Federation achieved as a great opportunity. Thus naval operations from states bordering the Black Sea will take place in principle under an almost total coverage of some elements of the A2AD belonging to the Russian Federation.

As it can be seen in Figure 3, it is assumed that the Russian Federation has made A2AD capabilities also in other regions as done in Black Sea. That proves that their arrangement is not only for preserving the naval or air superiority in certain areas of interest, but also shows their intention to develop power projection capability, thwarting access to any opponent in conflict areas, or where there are specific crisis situations over which wants to exercise its control.

The A2AD capabilities may be used to counter the threat from air fight environment and even use electronic warfare measures against satellites revolving low Earth orbit. In this case not only the movement of naval forces belonging to riverine littoral states can be influenced, but also may occur some limitations unilaterally imposed.

Specific to the Black Sea region, based on this analysis, access into the area of some ships and/or aircrafts as components belonging to NATO and US forces, deployed here in order to execute exercises or specific activities jointly with naval forces belonging to Black Sea region partner states, might experience some negative reactions from the Russian Federation.

Even the intervention of NATO's rapid reaction forces (INRF), in order to solve crises in support of NATO regional country members and partners, could know different manifestations of opposition from them, if INRF actions do not match to Russian Federation interests. Greater attention should be given to the threats generated by electronic warfare components of the A2AD composition, given the current development of electronic attack equipment and increasing performance of over the horizon targeting radars.

As we are in a technological advancement era that is addressing to a variety of fields, including the military, and which given major emphasis on technology development dedicated to any fight environment, including cyberspace and more extensive use of the electromagnetic spectrum during operations, naval forces doing action inside A2AD covered areas must know own vulnerabilities due to operating technology and equipment in such an environment and methods of mitigation of them. Also to support naval forces operating inside A2AD covered areas, requires continuous development of support elements, corresponding to domain of intelligence, surveillance and reconnaissance (ISR), but also should not neglect the fact that they are dependent on the use of the electromagnetic spectrum and combat cyber environment.

The limitations imposed by the need for the armed forces to act inside of A2AD systems coverage area, which sometimes is extending simultaneously its influence over neighbouring territories, and surface, air, submarine, space and cyber fight environments, must determine a struggle at decision-making level in order to identify the best measures to ensure the possibility that owns forces can operate without limitation, in any degraded or even hostile environment.

For that is needed to develop an institutional approach in order to identify all existing types and levels of threat, the risk assessment and all potential effects and implications generated by them.

CONCLUSIONS

Using A2AD means in order to forbid access and/or deny access to a potential opponent in certain areas of interest is not a new aspect; moreover, that concept does not belong exclusively to the Russian Federation. Similar measures have been implemented at some time in history and also by military forces of other countries. Each of them had different manifestations determined by the degree of the technological stage of the fighting means used during that period. Consequently, we believe that there is a cyclical evolution and development of this concept.

Additionally, we can assume that for each A2AD system of the moment, there exists for all opponents a real struggle to develop strategies which are targeting forms of response and capabilities, which will make it able to eliminate or to ensure deception. Effective results anti-A2AD can be achieved also by developing the effective ISR capabilities, to ensure not only data required for detailed knowledge, analysis and understanding of the capabilities and the vulnerabilities of the existing ones, but also the development of technological countermeasures or other measures, able to cancel them. It is possible that due to the future evolution of both the conceptual approaches and technological developments, this acronym, A2AD will not to have a future conceptual relevance as that it has today. Thus, addressing this concept, related to a Naval Force whose operations are carried out inside of an A2AD coverage area, it is important to understand the nature of threats, the threat level, one's vulnerabilities and their implications in terms to achieve effective force protection measures.

As the potential threats can change without warning into a real hostile action, it is necessary that the naval forces have a high knowledge and preparation level which will make them adapted to operate in a deteriorated and hostile environment. They must possess a high degree of interoperability, to be able to easily adapt to a new situation, and have a high readiness capacity to act in unforeseen circumstances; they must also be flexible, and - last but not least - know the specifics of the environment of cyber warfare, A2AD electronic warfare systems capabilities, inside of which range it is. The Naval Forces and armed forces in general should consider simultaneously both the existence of A2AD components coverage areas and the implications generated by them. The assumed approaches must serve to be sufficiently prepared, adaptable to unforeseen circumstances, interoperable with partners, to have an efficient capacity of immediate reaction, both independently and in the joint framework, in order to ensure timely response measures to any potential threat.

We can say that, for the naval forces acting within a complex A2AD coverage area, the meaning of Sun Tzu's guidelines, expressed in the following quote: "*know your enemy and know yourself; from a hundred battles, you will not be exposed to any dangers. When you do not know the enemy, but you know yourself, your chances of victory or defeat are even. If you do not know the enemy and even yourself, it is sure that you will find yourself in distress in each battle*"¹² - transcend over time and are still valid nowadays.

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COLD WAR. ECONOMIC WAR. HYBRID WAR

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Abstract: *Always, state entities have tried to impose their political will on each other, by using from the start either non-military means - food, water, transport, trade, sabotage, conspiracy, espionage, minority rights, religious injustices, embargoes, blockades, misinformation, internal discord, etc., but they said they were at war when they resorted to lethal weapons. All wars, whether old or new, whether local or global, contained, contain and will continue to include in the planning, organization and development process, as necessary, elements like fifth column, groups of sabotage, elements of civil disobedience, partisan groups, international support media, religious minority etc.*

The Cold War was a metaphorical statement of political misunderstanding between two large groups of states, a pre-war situation unwanted by any of them. The economic, psychological, communicational and other dimensions of the Cold War were complementary to the essential aspects characterizing it: the balance of power and mutual deterrence.

Lately, mass-media is replete with the use of phrases like: total war, limited war, world war, cold war, nuclear war, informational warfare, economic war, energy war, terrorist war, anti-terrorism war, modern war, conventional war, future war etc., and now to abound opinions about the so-called hybrid war.

Given the lack of rigor, the current state of peace is delivered in communication by a lot of wars, leading to confusion and disorientation in social terms. Therefore, we consider it necessary to define both scientific state of war and state of peace, with the series of conflicts that arise from conjunctural interests.

Keywords: *cold war, economic war, energy war, hybrid war, religious war, conflict.*

Attempt of definition

Lately, mass-media was overwhelmed by the use of phrases like: total war, limited war, world war, cold war, nuclear war, informational warfare, economic war, energy war, terrorist war, anti-terrorism war, modern war, conventional war, unconventional warfare, land warfare, naval warfare, air warfare, aero-naval war, psychological warfare, cyber war, current war, future war, etc., and soon to abound in opinions about the so-called *hybrid war*.

When there are a lot of wars, public opinion tends not to disburse attention to them. War becomes a common phenomenon, a trivial event, common thing, like goods of large consume, to which no longer marketing does really grant importance. But human history is the history of war, and every war has its own form of preparation, conduct and ending. Therefore, we can say that social organizations have been either at peace or at war. The various forms of disagreements were always part from the state of peace and could lead either to normalized relations, thus, to the state of peace continuation or at worsening the relations, thus to the triggering of the state of war.

Ancient wars were lead to subject the neighbouring social structures, be they cities, kingdoms, empires, etc. The winner had the right of life and death over the defeated. Human settlements could be destroyed, the population could be massacred or taken captive and riches became prey of war. The Bible has as a point of starting the exodus of a population that had

been brought into slavery by an Egyptian pharaoh and even with divine help will have to occupy their promised land, all through the war. Homer masterly described the Trojan War, which resulted in the destruction of the stronghold, but also nurtured the warriors' heroism, either defenders or attackers. That is why Alexander the Great slept with the Iliad under his pillow because he wanted to be a worthy descendant of Achilles.

Great empires arose by wars of conquest and subjection. Persians, Romans, Mongols, Arabs, Muslims, etc. extended their territorial power by conquering citadel by citadel, town by town, country by country, etc.; their military force was the decisive factor that drawn borders. Wars were won by army, populations etc., but also protector gods participated with each party to the conflict. Trojans' gods faced with the Greek gods, gods of the Romans faced with Dacian gods, Vandals gods faced gods of the Romans and so on, there were winner gods and defeated gods in heaven also, and tiebreaker determined by what happened in military clashes on earth. Things followed this script because the military leader was the representative of the gods on earth. His will was the will of the gods, and the battles' results were considered signals of the will of the gods. The winners brought them hosannas; they raised temples etc., and losers considered their defeat to be punishment of their own gods.

After Emperor Constantine in 313 AD, issued the Edict of Milan, Christianity became the state religion within the Roman Empire borders, which included a geographic area that stretched from England to Central Asia. After the collapse of the Western Roman Empire in 455 AD, there were several state entities with local political leaders, but also with one religious leader, the Pope. Between political will and religious will there were many frictions. The confrontation between Henry IV and Pope Gregory VII entered the history. Henry, in 1056, became master of the kingdoms of Germany, Italy and Burgundy. After its new rules, the Pope could not be judged by anyone, his decisions having the force of divine law. In line with the views of the German Bishops, Henry IV demanded the abdication of Pope Gregory VII, in a synod held in Worms. In turn, the pope held a synod at Rome decreed excommunication and suspension of all German and North Italian priests and dismissal and excommunication of Emperor Henry IV. Political, administrative and religious chaos swept regions facing the will of the emperor with the will of the pope. To avoid the humiliation of a public trial of excuses, Henry IV, and his wife, have made a secret journey to the castle of the Pope being kept waiting, barefoot, three days at the Pope's gates as a sign of penance until were received to formulate new oaths of allegiance.

With the blessing of the Pope's representative, some German nobles chose another leader. After years of bloody internal fighting, only in 1180, Henry IV regained political power and organized the replacement of Gregory VII with another pope, Clement III¹. Amid the friction between the papacy and the political power, in 1534, Henry VIII separated from the Catholic Church because he refused to annul his marriage to Catherine of Aragon and would not recognize therefore his marriage to Anne Boleyn. Henry had taken a snap Reform in England by the Act of Supremacy, by which the monarch became head of the Church of England².

After Christian peace was established, following the completion of Thirty Years' War, 1618-1648, the state – not the empire, nor the dynasty or religious denomination - has now become the reference unit of the new European order. It was established equality of sovereign states, regardless of their internal political organization, and affirmed the right of each state to decide its own internal structure and its state religion, minority sects being able to practice their religion without fear of forced conversions. The essential element of peace of Westphalia was the fact that excluded any right from outside, be it even the religious order, on

¹ Cf. Rodney Casteleden, *Evenimente care au schimbat lumea*, Editura Meteor Press, București, 2012, pp. 122-124.

² *Idem*, p. 178.

the inside, everything is subordinate now to the national interest, represented by the state. Being used for the first time, the national interest represented "... not an exaltation of power, but an attempt to limit and rationalize its use. Various generations of armies marched on European territory under the flag of universal (and contradictory) moral considerations and prophets and conquerors unleashed total wars in looking for a mixture of personal dynastic, imperial and religious ambition. Logical and predictable interpenetration in terms of theory of state interests was meant to counteract the chaos that reigned everywhere on the continent"³.

These principles of international law have made Carl von Clausewitz to define war as an extension of the policy by using violent means⁴, basic idea that is also found in war definition into the pages of profile dictionaries. Thus: "War. Social-historical phenomenon that represents the most violent manifestation of conflict relations existing at a given time between the large groups of person (peoples, nations, states, coalitions of states, social, ethnic, religious communities), organized militarily that use armed struggle to reach goals, which gives the phenomenon a strong destructive feature"⁵.

Analyzing metaphorically the basic features of the former Barbarians, devoid of inactivity, living in obtaining by force of civilized village communities' work results, Lucian Blaga associate them "hunt and war, which is a kind of hunting, but of people"⁶. In actuality, attempts to define the war, like "the war is a clash of opponent wills"⁷, or any action involving distinct social groups can be explained by some kind of war, are generating misunderstanding and confusion.

Cold war

World War II ended, the winners split their sphere of influence but the political collaboration following the war ceased to be conditioned by military goals. Obvious differences on domestic policy, democracy, the role of parties, from individual human rights to religious freedoms, etc. have made the winners group to split in two: the West and the East, some advocates of capitalism, the others communism followers.

On one side were countries around the United States of America and on the other side there were countries under Soviet influence. The tension between the two groups of countries was marked by the speech of Churchill on March 5, 1946 in Fulton (Missouri, USA), where he talked about an Iron Curtain that swept over Europe from north to south and placed the two sides in a state of "cold war". The end of this war, a war of ideologies, dominated by strategic misinformation, arms race, block policy etc., can be fixed on May 12, 1989, when US President George Bush, speaking to graduates from "Texas and M University", stated that the US is ready to receive USSR back in the world order. Only that the Cold War was the umbrella protection of the two groups of states divided into two collective military systems: NATO and the Warsaw Pact, within which there were different true wars worn by the US, USSR, Britain, China, France etc. with other states outside the military blocs.

³ Henry Kissinger, *Ordinea mondială*, Editura RAO, București, 2015, p. 32.

⁴ See Carl von Clausewitz, *Despre război*, Editura Militară, 1982, cp.1

⁵ Colectiv, *Lexicon militar*, Editura Saka, 1994, p. 271.

⁶ Apud Liviu Rebreanu, „Laudă țăranului român, 29 mai 1940”, in *Sinteza*, 30 July 2016, p. 20.

⁷ Octavian Manea, *Buna guvernare – linia întâi a războiului hibrid*, article, Foreign Policy Romania, August-September, 2015, p. 38.

Economic war

After the Cold War fashion was also developed the economic war. If the Cold War had as content the mutual threat between the two major groups of forces, the current economic war is characterized by a lot of economic conditions characterized by winners and losers. Economic safety, economic security and economic strategies have emerged as ingredients of economic war. Therefore, mass-media enshrines the idea that the Cold War ended and a new era was launched, that of economic wars. The Gulf War was described as a camouflaged economic war. It is alleged that the US is in economic war with China or with either the EU or Russia etc. German economic competition made to the American in the Balkans was considered to be the cause of US military intervention in the area, a military campaign designed to dampen overall German economic penetration in a geographic area that was of interest for the USA. The Caspian Sea, the Black Sea, the East China Sea, and the Pacific Ocean as a whole seem to have become large expanses of water that unfold fierce economic confrontation.

When Chinese and Japanese companies are heavily investing in the US, and American companies heavily invest in China and Japan, it raises a question of home companies legal conduct in the territories where economic activities in the case of mutual military actions. Such a perspective is analyzed by forms of manifestation of economic wars.

Even an ordinary state of facts of the evolution of economic indicators between countries is considered to be a cause or effect of economic wars. For example, it is considered that the US are guilty for American companies cannot deliver to Russia machinery contracted to perform counterpart deepwater drilling and the Russian partner company is in bankruptcy. Chinese thesis of mutual complementarity of the economies is appreciated that had dramatic repercussions for Russia. In fact, Russia is 4.5 times more dependent on China than China to Russia. In 2006, Russia had a positive balance with China; since then, this balance became negative and in 2014, the surplus in favour of China reached 12.7 billion dollars⁸.

Economic interests grow and diversify taking into account the competitiveness. In a given market, companies that succeed to surprise the competition by competitive advantages prevail. Therefore, it can be argued that economic life is marked by a constant state of competition, which lists producers, consumers, state institutions, intergovernmental institutions etc. As long as competition is conducted under a generally accepted normative framework, it is considered that economic activity lives during peace.

The state of economic competitiveness is objectively present in all phenomena, processes and economic relations, both at national and supranational plan. Companies and states are in constant competition for access to resources and sources of supply, for access to modern technologies, access to markets, etc.

Economic conflicts in the form of misunderstanding, threats, hostility, injustice etc. occur when economic actors find that the rules of economic life are violated. Cases of price subsidies, privileges for transport, favouring suppliers, disclosure of information, preferential taxation, subsidizing consumption etc. are situations that emphasize economic conflicts. Suppliers, markets, prices and shipments are economic means that transpose in context elements of the conflict area. As such, among economic agents, economic conflict is understood as form of manifestation of social conflict generated and maintained by causes related to the economic life. For most social communities, continuously rising of prices generate discontent among consumers, a new tax generates discontent to producers or traders, providing preferential raw and materials generates dissatisfaction among producers, closure or

⁸ Viorel Patriki, „România lucrului țăpăn făcut”, article, *Lumea*, 9 May 2015, p. 9.

opening of transport routes generates discontent for some of the producers or consumers, etc. Grievances of this kind are perceived as conflicting aspects of the status of economic origin.

Since the state policy is put in the service of an activity field, for example in the economic scenario, the situation of conflict is maintained by the state, the political power becoming the cause and work of economic conflict. As states have increasingly assumed leadership role in the economic field, interstate conflicts have arisen and they worn the germs of economic interests. When those conflicts have become acute, when there was aimed to achieve at any cost to unite economic success, even by subordinating the respective field to all other state functions, economic conflict was transformed into economic war. The imposition of political will by economic successes started to become state practice. Throughout history, especially in the ancient times and feudalism, many wars have been heavily influenced by economic means, which were translated in starvation, deprivation of water, earth burning, crop destruction, trade embargo, interruption of supply routes etc.

So that mankind has learned hundreds of years ago, about the emergence of the so-called trade wars, custom wars, economic boycotts, economic blockades, embargo etc.

Trade war was seen as a modern form of social conflict, which manifested by protectionist commercial measures with prohibitive character on imports of goods from one country or several countries, either as a means of retaliation from that country to trade regime its goods faced in those countries or elsewhere, or to compel some countries to abandon unfair trade practices or to obtain concessions from them. In recent times, trade wars mostly aimed not necessarily to obtain trade concessions from other countries, but the achievement of other goals, of declared political interest. Trade war methods are very different, including as appropriate: customs duties, taxes, quota shares, dumping, boycott, economic blockade and other forms of discrimination etc.

Customs war is that form of social conflict, which is reflected by trade policy measures, with prohibitive character in the tariff field. It manifests in the form of customs reprisals from the country in order to coerce advantageous concessions and agreements from a partner. When measures specific to trade war are limited to tariff domain, the trade war is customs war, and when the measures taken under customs war takes on a broader range of methods and means, customs war turns into trade war.

Economic boycott is a form of acute social conflict, which is expressed by total or partial refusal to have economic relations with a person, organization or state, as a result of a political approach.

Economic blockade is also a manifestation of social economic conflict, which involves the action of isolating a country or group of countries, taken by one country or group of countries to undermine the national economy of the first. It aims at preventing the import of raw materials and finished products to countries under embargo and deprives them of outlets. Economic blockade may be general, when it refers to the entire set of economic relations of the countries subject to embargo, or partly, when the blockade refers to certain goods or certain forms of economic relations, such as financial blockade, credit blockade, cotton blockade etc.

The embargo is a manifestation of social conflict in the economic field, which consists of prohibition measures taken by a state against access to its market to goods or capital from a certain country or against own exports of commodities or equity in other states. Its history binds to ban the entry and exit of ships in national ports and continues today by bans imposed by countries or international bodies concerned to other countries deemed to have violated the economic, social, political principles etc. The boycott, the blockade and the embargo are all expressions of deepening social conflicts, which subordinates the economic domain to all other areas of powers, including the military.

Modern phrase covering all of the vectors' action of the field are called economic war. By this means the acute form of social conflict in which political goals and objectives are met by economic actions. If classic war has been accepted as a continuation of politics by other means, mainly violent means, economic war is seen in everyday life as a manifestation of political power by using economic means. Given that energetic resources is a major power and security element for those who own, control, exploit, distribute or use them, but also a tool of dependence and insecurity for those who are vulnerable to free access to energy resources, Shintaro Ishihara prediction that "XXI century will be a century of economic warfare"⁹ is confirmed. An almost continuous war, not entailing the use of military force, but that does not exclude it. Since the interwar period, when the economy was considered the power in a state, it was appreciated that "economic war does not necessarily imply the state of war; it is one of the forms of struggle of the peace time. In case of conflict, the economic battle is amplified: the external market becomes a political weapon more effective because the state itself conducts operations"¹⁰.

Economic conflicts are dynamic and complex, in accordance with changes that take place in the field. While some obvious economic aspects gains weight and keep public attention awake a long time. The cotton, coffee, silk, etc., have gone down in history not only as commodities, but as products bearing real wars. In actuality, in the general phrase "economic war" increasingly imposes phrases as "energy weapon" and "energy war".

About "energy weapon" already are enough literature references in everyday stating that "...in recent years became increasingly important in international economic policy. Although it does not have a very consistent theoretical background in practice this instrument is often used by "links" of the owner - operator - producer - carrier - retailer – consumer chain. The primary purpose of its user is to impose his will and to influence the behaviour of other actors in order to achieve their own interests"¹¹.

From a means of substantiating the global power "Control oil and you control all continents"¹², energy evolved from the means to the weapon to influence policy and power taxation, the basic component of the term of present "energy war". By "energy war" we understand the metaphorical contemporary form to undergo interstate economic confrontations in which energy resources are means of influencing and imposing political will.

Close events, but others in progress, allow us to sustain that "energy war" is about to mark moments of extreme social conflict: In the early 1970s, the US threatened states in the Middle East on the danger of using force if the oil price will rise and their economic interests are threatened, oil for American politicians becoming an element of national security. After the so-called "gas war" between Russia and Ukraine, in 2006, finance ministers of the G8 (USA, Japan, Germany, France, Britain, Italy, Canada and Russia) met urgently in Moscow, on February 11, 2006. And this time, prices were means of unrest and blackmail. The situation in 2006 was attenuated, but the assertions of people of responsibility have become worrisome: "Risks remain, and the most important are related to high and unstable prices of energy ... Increasingly often we see signs that show us that oil price rise is not only related to

⁹ Shintaro Ishihara, cited by C. Fred Bergsten in „Japan and United States in the New York Economy”, Theodore Rueter (ed.), *The United States in the World Political Economy*, McGraw-Hill, New York, 1994, p. 175.

¹⁰ Andre Piatier, *L'economie de guerre*, Librairie generale de droite et de jurisspendence, Paris, 1939, p. 189.

¹¹ Cristian Băhnăreanu, „Arma energetică” în *contextul relațiilor internaționale ale începutului de secol XXI*, Editura Universității Naționale de Apărare „Carol I”, București, 2007, p. 6.

¹² Henry Kissinger, United Nations, Agenda 21, in Chapter 9 „Protection of the Atmosphere”, Rio de Janeiro, 1992.

demand ... we are facing growing constraints related to their rise and supply, which could lead to macroeconomic disturbances as we have not been given to see until today”¹³.

As the gas, oil and coal are depleting products, energy war unleashed on this general background is about to impose new winners and losers in the vast energy competition. The situation is more dramatic in all cases where energy war attaches complementary tools of military assets.

Hybrid war

The West considered that Russia has attached Crimea to its territory through a hybrid war. The content of this type of war lies in the fact that a state actor to attain political objectives in relation to another state actor, uses a set of military and civilian leverages, providing support and reinforcing other social sub-state actors, which make impossible reaction for the target state. It is estimated that in such a war spectral capabilities are expanded: membership in the United Nations, macro-economic media, and energy measures - everything becomes a weapon. The proper operational novelty in the Crimea and eastern Ukraine is related to the almost perfect coordination of all involved instruments - political, military, economic, informational, and diplomatic. In other words, the traditional tools used in a new structure, a new network”¹⁴.

In our opinion, any war uses both traditional tools and other innovations, which are weighted in a mix of actions (military, informational, psychological, economic, diplomatic, media, religious etc.), designed to break the will of the opponent. Each used instrument may have greater or smaller role in the economy of war, but their perfect coordination cannot give the quality of a new type of war, to be defined as a hybrid war.

Western countries have labelled the events in Ukraine in connection with the Crimea and two other regions in its east as hybrid war because its predominantly internal instruments rather than military led to a state of fact that speaks of a war without being declared war, it speaks of achieving political, social and territorial goals without being clearly expressed by the parties to the conflict situation. Crimea has joined to Russia ignoring the Ukrainian state authority and defying international public opinion. The other two regions in eastern Ukraine were armed and proclaimed independence from Kiev, is nearly impossible to re-establish state authority over them since Russia ensure the maintenance of their new political status.

Therefore, Russia is accredited as the country that has patented this new kind of war, hybrid warfare that “shows a simultaneous convergence between conventional weapons, insurgency and guerrilla movements, subversion, terrorism and even elements of the crime world. It is a spectrum of possibilities without clear borders that intermingle, forming increasingly creative and lethal combinations. Hezbollah in 2006 offered an example of a rebel insurgent group able to peered fight with a state, Israel. With Ukraine, everything is falling into another league, where the proxy subversive groups become sponsored extensions of a state actor by accessing its resources - Special Forces and umbrellas of smart weapons”¹⁵.

Since such a war has become Russia’s international practice, it is considered that “A state becomes vulnerable when exploiting distance, cleavages of all sorts between civilians and local government, anti-system feelings. In other words, exactly the kind of situations where citizens are tired of corruption, the government loses its legitimacy, ethnic minorities

¹³ Rodrigo Rato, apud. Marin Rizea, *România și noile provocări ale începutului de mileniu*, Scientific Communication Session, RO-NDU, 2006.

¹⁴ Octavian Manea, „Buna guvernare – linia întâi a războiului hibrid”, article, Foreign Policy Romania, August-September, 2015, p. 38.

¹⁵ Cf. Octavian Manea, „Războiul hibrid”, article achieved by interviews, Foreign Policy Romania, June-July 2015, p. 38.

see their identity threatened. On this background, specialists in political warfare enter the stage and prepare land and infrastructure for subversion: identifying potential leaders, recruiting people, creating underground resistance cells that are activated at the right time. This is the essential component: undermining, disarticulation of a society from within ... Russian money resembles disorder, buys local politicians, helping them to win the election ...¹⁶.

Only victory by other means but by the use of armed forces is a dream for thousands of years, supported by principles as: "Do not let you escape any opportunity to disrupt the enemy, create them insecurity in the smallest details, find means of irritating it and making it falling into the traps you stretch to them; Dim its forces through repeated diversions ... agitate and trouble cities in the enemy country ... and rather try to subdue the enemy without fighting deployed: this will be when you will ascend to a higher level, coming close to excellence ... be victorious in secret... Do so that the enemy to be in your hands as a circular stone to make roll from the top of a high mountain; used force is minimal but the results will be enormous. In this way it will be recognize one who has power and authority ... do so as the enemy to suffer from hunger, misery and disease ... engage force only when other means are useless ... do so as the city dwellers and peasants to find their own interests by helping you, to offer their support without being compelled by force of arms ..."¹⁷. Here are the principles urging the embodiment of hybrid war, and history knows many forms of manifestations of interstate confrontations which it has implemented in particular.

CONCLUSIONS

Always state entities have tried to impose their political will on each other, using in the start either non-military means - food, water, transport, trade, sabotage, conspiracy, espionage, minority rights, religious injustices, embargoes, blockades, misinformation, internal discord etc., but they said they were at war when they resorted to lethal weapons. All wars, whether old or new, whether local or global, contained, and will continue to include in the planning, organization and development process, as necessary, elements like fifth column, groups of sabotage, elements of civil disobedience, partisan groups, international support media, etc. The Cold War was a metaphorical statement of the situations of political misunderstanding between two large groups of states, a conflicted pre-war situation unwanted by any of them. The economic, psychological, communication and other essential aspects of the Cold War were complementary to what it characterized: the balance of power and mutual deterrence.

The economic war, hybrid war, like other types of wars, that do not use lethal weapons, are metaphorical expression of conflict or interstate competitive situations that more suggests a certain state of affairs, situation which has nothing to do with the state of war.

Owed to the lack of rigor, the current state of peace is delivered in communication by a lot of forms of wars, leading to confusion and disorientation in social terms. We believe it is necessary to rigorously define the state of war and equally rigorous the state of peace with its many conflicts that arise from conjectural interests.

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¹⁶ *Idem*.

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PUBLIC WARNING - SECURITY RISKS, ESPECIALLY IN AREAS WITH ACTIVE TERRORIST ISSUES AND THE POSSIBILITY OF EXTENDING GLOBALLY BY THE EXISTENCE OF IMMINENT DANGER OF TERRORIST ATTACKS AND KIDNAPPING FOR TERRORIST PURPOSES

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Abstract: *Considering that the terrorism issue has not been addressed in the most appropriate manner, at the moment we are being faced with its globalization. Regarding public warning about security risks, especially problematic in areas with active terrorists, and the possibility of extending their global action, the existence of imminent danger of terrorist attacks and kidnapping people for terrorist purposes, this phenomenon is a priority. Although Romania has a national strategy to combat terrorism, as most NATO member states do, the starting point for designing these strategies should be the question: Is it what we need or is there anything we should add?*

Keywords: *terrorism, risks, national security, public opinion.*

Introduction

From the knowledge gained so far, I believe that the terrorism issue has not been addressed in the most appropriate manner, with the globalization of its consequences. If you were to look into the past, it causes social-political movements, transforming beliefs and values into manipulation tools and techniques by maintaining an atmosphere of permanent confrontation.¹

By analyzing the *modus operandi* of terrorist attacks, it results that they are acting in violation of all political, legal, moral, or humanitarian norms, speculating not only the breaches in electronic security but also the moral scruples and restraints on normative-doctrinal institutions and agencies specialized in the fight against terrorism.² This suggests that the terrorist phenomenon has expanded in all areas of the human society, such as economy, politics, information, ethnicity, religion, culture, etc.³

If I were to define terrorism, I would say this is a set of violent acts committed by an organization, in order to create an insecure environment meant to change the rule of law⁴; according to some specialists from 25 European countries and North America, gathered upon a Conference on *"Improving the security of states in a multipolar world focused on extremism"*, the conclusion is that terrorism is an extreme manifestation of extremism.⁵

The efforts to restrain terrorism can be classified according to three definitions:

¹ Gl. mr. Ion ȘTEF ȂNUȚ, Terorismul, sfidare sau declin? în revista Infocom, editată de Direcția Operații a S.M.G., octombrie 2004, p. 13

² Col. Mihail DUMITRESCU – Ținte potențiale ale operațiilor psihologice în situații de criză, generate de pericolul atacului terorist, revista Infocom, octombrie 2004, p. 34.

³ ³ Dr. Constantin MOȘTOFLEI, dr. Gheorghe VĂDUVA – Tendințe în lupta armată, Editura Universității Naționale de Apărare, București 2004, p. 19.

⁴ Le Petit Larousse, Paris, 1995, p. 1002.

⁵ Enhancing the Security of States in a Multipolar World: Focus on Extremism, George C. Marshall European Center for Security Studies, September 18-22, 2000, p. 25.

- Anti-terrorism - includes all measures taken to prevent terrorism or a particular terrorist act. These measures include hazard assessment, personal protection and safety actions.

- Counterterrorism - is the answer to a terrorist action that took place. It includes tactical response, investigation and a crime management structure that directs the actions of emergency response to a terrorist action which is in progress, such as hostage taking or kidnapping.

- Prevention of terrorism - is a generic term used to describe the totality of terrorism and counterterrorist measures. These are the actions taken by governments to counter the threat, including special measures initiated by the military structures of law enforcement professionals and on-line security and protection to reduce the likelihood of an attack against a particular target.

Such measures also include actions taken in retaliation to an event, ranging from the use of tactical teams in a situation of hostage taking to the bombing of the territory of a country that sponsors a particular action or a particular group.

If we look more at terrorism, we can see that these individuals do not think in a normal way. They are fanatically attached to their cause and honestly believe that to achieve their goals and methods any means, including killing people are justified.

Causes

This current threat, more often met and used in the contemporary world, is the major source of instability both at sub-regional, regional and global levels, because we all are affected by it, both directly and indirectly. I say this because terrorists demonstrated capabilities to attack anyone, anywhere and at any time, regardless of the consequences and the consequences that this action will bring about.⁶

If I were to enumerate the causes of the phenomenon of terrorism, I remember some past events that have been settled for a while, because of the impossibility of manifestation during the Cold War, and religious intolerance, economic performance subdued to certain states that have led to poverty, corruption, unemployment, weapon, people, drugs and other material smuggling.

Drawing a parallel between the past and the present, we can see that in previous centuries, there is also a distinction between the forms of terrorism, whereas now we notice a trend of coordinating action groups,⁷ the use of religion to justify their actions⁸ as well as involvement in terrorist actions organized crime in order to focus more and more material and financial resources, used in support of terrorist actions. To incorporate all the above, I would say that the struggle for power and influence that associates potential supporters easily influenced and manipulated, are especially people with low living standards, a humble culture, illiterate people dissatisfied with the society they live in, people abandoned or homeless, etc.; given that the authorities cannot satisfy all these grievances of these individuals, terrorist leaders urge these individuals to actions against the authority, which they consider illegitimate and unjust with these groups of people, causing people to commit

⁶ Andrew BIUGAMAN – Institutional Responses after 11th September 2001, articol publicat în Combatig Terrorism Nato and Transatlantic Dimensio n, International Seminar, National Defense University Bucharest 2002, p. 35

⁷ Liviu M U R EȘAN – Strategia Securității Naționale și politica externă după 11 septembrie 2001, comunicare științifică pu blicată în “Securitatea națională la început de secol XXI”, Editura Academiei de Înalte Studii Militare, București 2002, p. 15

⁸ Vasile SIMILEANU – Religii și doctri ne religioase, în Geopolitica, revistă de geografie politică, geopolitică și geostrategie, Anul 1, Nr. 1, Editura Top Form, București 2003, pp. 77-78.

kidnappings, attacks on state security, hostage taking, etc. (e.g. France, the Boston Marathon bombing)

For example, the kidnapping is illegal deprivation of liberty of a certain person occurred before the start of action in order to obtain a reward, or obtain other benefits. Kidnappings are performed more in countries where terrorists operate on their own land and have a conspiratorial organization, so they can study the program, habits that person or persons targeted and, after kidnapping the latter, have a secured place where to hide the victim, conspired and can move to negotiations with the prisoner's family or the authorities, according to the aims of terrorists and the place the kidnapped person occupies in society, which is less common in our country because we are a country of transit. Commonly, there could be incidents of kidnapping and hostage-taking as they happen where terrorists operate abroad or in countries where they can support their operations in absence of any conspiracy. To obtain material benefits for themselves or socio-political advantages for the benefit of the states upon whose orders they acted, terrorists seize a large number of innocent people or dignitaries.

What is there to do?

Given that this phenomenon is present at world scale, it could be solved, or at least held under control through the participation of all states in actions against terrorism, addressing the whole range of causes of manifestation, both at national, sub-regional, regional and global levels, as the measures that can be applied within a state cannot be generally valid for all the states concerned.

Unlike in other countries, in Romania the terrorist activity is not widespread yet, though there are signals that indicate that after the events of December 1989, Romania has become a country of transit for drug and arm trafficking, as well as a route of an increasing flow of refugees from the third world countries to the industrialized ones; these factors are the prerogative of terrorist activities.

From works dedicated to this topic, we have seen that Romania is in terms of configuration and prevailing trends in organized crime, due to the regulations imposed by the totalitarian system, especially those controls of state and party extended to all sectors, particularly low circulation outside state borders and especially thorough verification of persons and goods entering or leaving the country.

After 1989, after setting up the Romanian Intelligence Service (SRI), the Anti-Terrorist Brigade (BAT) and the Guard and Protection Service (SPP) were created, subordinated to the Presidency of Romania and whose duties are guarding and protecting the Romanian dignitaries as well as the foreign dignitaries visiting Romania.

According to Law no. 51 of 21 July 1991 concerning the national security of Romania⁹ art. 3, among others, stresses out the following facts:

➤ g). actions that threaten the life, physical integrity or health of persons who fulfill important functions of state or representatives of other states or international organizations whose protection must be ensured during their stay in Romania, according to the law, treatments and agreements reached, and international practice;

➤ i) terrorist acts and initiating or supporting in any way any activities whose purpose is to perform such acts;

➤ j) attacks committed against a community by any means;

⁹ Legea nr. 51 din 21 iulie 1991 privind siguranța națională a României

➤ 1) the initiation or creation of organizations or groups or joining or supporting them in any form for the purposes of any of the activities listed in subparagraphs a). and k). And also, carrying out secret activities by organizations or groups established by the law.

Article 5 states: "*national security shall be in accordance with applicable laws and the obligations assumed by Romania under international conventions and treaties on human rights to which it is party.*"

Article 6 of Law no. 51/1991 says there are provided "state bodies with responsibilities in national security: Romanian Intelligence Service, Foreign Intelligence Service, Protection and Guard Service and Ministry of Defense, Home Office and Ministry of Justice, through specialized internal structures.

Work to achieve national security is organized and coordinated by the Supreme Council of National Defense.

The Law no. 14/24 February 1992 on the organization and functioning of the Romanian Intelligence Service¹⁰ in Article 6 c). Areas for action are established SRI follows:

c). ensure antiterrorist protection of Romanian and foreign dignitaries and other officials, according to rules set by the country's Supreme Defense Council.

Although Romania has a national strategy to combat terrorism, as most member states of NATO, the starting point for designing these strategies should be the question: what if you have or would have added something? In response to this question, I would say apparently yes, but in reality, the terrorist phenomenon has not diminished, but - on the contrary - has amplified.

If at first it was only based on the religious dimension, at present, it has spread globally, surviving by adapting rapidly to the current security environment. Thus, because of this precarious environment, it is necessary to put emphasis on prevention, because evil once installed cannot be removed with ease. Given that terrorists have a great capacity to adapt to the social, political and geographical believe that the security structures of international and national, should be more flexible and adapt more easily in making decisions to act.

Regarding warning the public about security risks, especially in areas with problematic terrorist activity and the possibility of expanding them globally by the existence of imminent danger of terrorist attacks and kidnapping people for terrorist purposes, this phenomenon is a priority for the Ministry of Foreign Affairs¹¹ and at the same time and a specific argument awareness of Romanian citizens abroad or moving abroad. For example, in 2014, through a press release, the Foreign Ministry recommends the Romanian citizens to exercise extreme caution and alertness during transport in crowded areas, tourist centers, terminals, airport, rail or sea, markets or public institutions representative especially in areas with active terrorist issues. Those traveling abroad, it was advised to inform themselves in advance in respect of carriage of states to be visited.

The Foreign Office recommends a thorough information on website www.mae.ro and sites specialized in terms of security in certain regions, which aim to protect Romanian citizens and prevent cases of emergency where they might be involved. Besides this, the public can be warned and creating an alert system via SMS, which informed citizens of Rome are at driving in potentially risk. Besides this there are application that can be installed on mobile phones "travel safely" whereby any person may announce the presence in the area, and can also alert the diplomatic and consular representations Romanian. All this is meant to provide consular assistance, if need be.

¹⁰ Legea nr. 14/24 februarie 1992 privind organizarea și funcționarea Serviciului Român de Informații

¹¹ <http://www.mae.ro/node/29122> , accessed on 07.05.2015, 21:30.

CONCLUSION

After 1989, with the opening of borders, Romania has become a transit country for trafficking of arms, people and drugs. Besides citizens coming from Ukraine and Moldova, gangs of Chinese traders who came to Romania have begun to create problems too. They brought with them their country's bloody practices of Chinese triads, such as the suitcases found deep in the Herăstrău Lake, that contained the sectioned bodies of rivals and of Romanian citizens who had contact with these visitors.

The foundation of "the National Institute of Intelligence" within SRI is an important step in the training of specialists, endowing them with knowledge of psycho-sociology that allows them to successfully cope with the demands imposed by this work.

To cope with counterterrorism, specialized units are required to keep the pace with the top technique, to have access to the most modern means of intervention and to be aware of the methods and means terrorists use to carry out their terrorist actions.

The contemporary human society will most likely find ways to eliminate the possibilities of endangering the life of a neighbor, but we cannot do anything as long as we assume that violence is inherent in the human condition.

Worth reflecting is the famous dictum of Napoleon: *"The belief of others that I will retaliate violently forbids me to have to act violently."*

The mission of terrorists is to break the superstition and division of legality, and that is why terrorists will never win those people who need to know and understand the nature and causes of terrorism and to learn how you can respond to the terrorist acts which threaten the lives and our freedom and transforms us all into hostage in our own home, in our world.

I conclude by saying that in the face of the terrorist threat no one is safe, and the costs of preventing this threat no matter how large it is, is always infinitely smaller than an accomplished act of retaliation. Therefore, to prevent, combat and eliminate the evil condition *"sine qua non"* is the in-depth knowledge of the phenomenon in all its complexity.

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INFORMATION SECURITY- THREATS AND RISKS

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Abstract: *Information security is a strategy that combines education, training, procedures and technology to enhance the privacy, integrity and availability of information held by company assets and more. The current phase is characterized by an unprecedented complexity and diversity, generated by the changes that occur in all fields such as political, economic or social.*

All these major transformations cause some specific features of international life and of the relationships between states, bringing to the fore phenomena, trends and events that should be deciphered in the hope of finding appropriate solutions so that world peace, the security and progress of peoples should be safeguarded.

Keywords: *information, international relations, security, threats, risks.*

Introduction

Information security is a strategy that combines education, training, procedures and technology to enhance the confidentiality, integrity and availability of information held by company assets and more.

The current phase is characterized by an unprecedented complexity and diversity caused by the changes that occur in all fields such as political, economic or social.

All these major transformations put their imprint on the specific features of international life, relationships between states, bringing to the fore phenomena, trends and events that should be deciphered in the hope of finding appropriate solutions so that world peace, security and progress of people are be ensured.

By national security we mean all policies formulated and the process of their application in order to maintain the integrity of the state, the protection of citizens' rights, of the environment and to ensure the state of legality and stability by using the tools of political, economic, diplomatic and military means.¹

National security has two fundamental dimensions, namely the internal and the external, international one. Internal security refers only to the institutions involved and the policies and programs implemented by them for the purpose of the efficient management of the security internally. External security integrates the internal security of citizens in the international context.²

This article will consider the use of cyber terrorism by China to conduct military operations and threats to US national security. Cyber terrorism has become the easiest and most efficient method of gathering information in the modern era.

¹ <http://www.cdcip.ro/pledoarii-2>, accessed on 10.03.2017, 12:30.

² <http://www.cultura.mai.gov.ro/editura-mai/sectiune1.pdf>, accessed on 10.03.2017, 13:50.

China as a nation continued to grow both economically and from a military perspective, but not at the same level as the UAS. As a result, this has led China to find other ways to strengthen its combat capabilities. China sees the US as its main antagonist of the XXI century. Thus, China makes massive attempts to access the sensitive information points of the United States.

The Chinese are known for constantly aiming at the US defence contractors and national laboratories such as Los Alamos National Laboratory and Lockheed Martin. The numerous attacks against computers in the last decade in the US and Japan have originated in China.³

The United States and China, have long fought cyber wars The Liberation Army of China reported that such a fight took place on July 27, 1999 after 8 bombings of the Chinese Embassy in Yugoslavia, where nearly 300 servers were affected.⁴

Cyber security is, as we can see, a sensitive issue in the China-USA relationship. For example, an FBI report reveals that China has developed a secret army of 180,000 cyber spies which is the greatest threat to the United States in terms of cyber terrorism, with the potential for destruction of the critical infrastructure, by disrupting banking and commerce, and compromising the databases military and defence.

According to an FBI analyst familiar with this topic, these spies have already launched around 90,000 attacks per year only against the US Department of Defence. The FBI estimates that the Chinese army has developed a network of over 30,000 Chinese military cyber spies, plus 150,000 private-sector computer experts, whose mission is to steal secret US military technology.

The US and many European allies are trying to find ways to destroy some computer grids in China, wherever there is a conflict. But the difference is that the Chinese are very good at making technological breakthroughs on the cyberspace battlefield. This FBI report concludes that by a massive attack China could take hold of a weapon of mass destruction, causing substantial damage to the American economy, telecommunications, electricity network and to military training.

One of the most effective weapons of China, according to the FBI report, is what the Pentagon security investigators called *Titan Rain*. This is a scanner in China which examines national defence and high-tech industrial site computer networks, thousands of times per minute, looking for vulnerabilities. The Chinese military hackers without any error keys leave no fingerprint and create a backdoor clean in less than 20 minutes.⁵

As a result, according to the US Department of Defence from 2007 until 2008, attacks have increased remarkably – 2007 – 44,000 attacks and 55,000 attacks in 2008; after 2008, they exceeded 90,000.

The Chinese Ministry of Public Security has an intelligence unit which effectively monitors all the Internet traffic of over 14 million users. This is an internal program that might affect Google. As a result, Google detected a highly-sophisticated attack on their infrastructure that originated from China. But the problems in the private sector do not stop there. As a prerequisite of doing business in China a few years ago, Microsoft was forced to provide government source codes for the Office company software. The Chinese state planning commission argued that Microsoft Windows operating system was a secret tool of

³ The Center for the Study of Technology and Society, National Security Special Focus: Cyberwarfare, 2001.

⁴ The United States and China held from cyber wars past. Liberation Army of China reported that such a fight took place on July 27, 1999 after 8 bombing of the Chinese Embassy in Yugoslavia, where nearly 300 servers were affected

⁵ <http://www.thedailybeast.com/articles/2010/01/13/chinas-secret-cyber-terrorism.html>, accessed on 15.03.2017, 22:00.

the US government and therefore called Microsoft to train Chinese software engineers to insert their own application software in Windows.

Besides attacking Microsoft in China, the FBI report also includes successful raids against the information systems of the State Department, the Commerce Department, the FBI and the Naval War College. Therefore, due to these problems between China and the US, most US government agencies have stopped buying Chinese hardware from Lenovo and other software. But China manufactures tens of microchips for major international companies, which could contain viruses set to become active when used in a computer network.

Western countries have accused China of spying aggressively long, but China has denied allegations of cyber war, accusing the US that a cyber-war is being waged against them, and the US in turn denies this.⁶ Wang Baodong - representative of the Chinese Embassy in the US – reacted to the charges, saying this is not true and that it is only a sense of paranoia in the US. He said that China would not do anything to harm the security or sovereignty of other countries. Therefore, in accordance with these policies, the Chinese government has not engaged and will not engage so-called civilian hackers to gather information and intelligence from other countries. He believes that the accusations against China, are totally unwarranted and reflect only the dark mentality of people who always look to China as a threat.⁷

The USA, as I said earlier, accused and accuses China of cyber espionage against US interests, of accessing important networks of military, commercial, research and industrial organizations.⁸ They believe that China represents the greatest risk to the security of the American technologies, increasing significantly the intrusion originated in China and targeted to the US government defence-related information systems.⁹

CONCLUSION

I conclude by saying that diplomatic tensions between the US and China are growing and as we can see this conveys the idea of a military conflict.

As we know, the US and China are the two greatest military powers in the world and the Chinese threat, above Al-Qaeda threat or conflict in Iraq, the US is the new war. For many years the USA has been the largest economy in the world, but sources suggest that China surpassed it, at least in terms of GDP.

Cyber terrorism, cyber-attacks or cyber warfare, regardless of its form, is a threat to the US. US development and dependence on technology has helped it in its development as a superpower.

Today, acts of terror could come from many sources, not only from extremists in suicide vests but from a few key computers.

All these things bring the two nations in a unique undeniable position, and in many ways ensure that there is a natural enmity between them.

⁶ "China's Response to BusinessWeek". *BusinessWeek*. April 10, 2008. Retrieved February 12, 2013.

⁷ Zetter, Kim (January 25, 2010). "China Accuses US of Cyberwarfare". *Wired*. Retrieved October 23, 2010.

⁸ Claburn, Thomas. "China Cyber Espionage Threatens U.S., Report Says". *InformationWeek*. Retrieved November 1, 2010.

⁹ Cha, Ariana Eunjung and Ellen Nakashima, "Google China cyberattack part of vast espionage campaign, experts say," *The Washington Post*, January 14, 2010.

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SPECIFIC CONCEPTS FOR THE RIVERINE OPERATIONS

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Abstract: *In this article we intend to perform an insight into the characteristic concepts of riverine operations through the comparative analyses of some specific doctrines and manuals, through the study of specific bibliography, journals and articles that refer to these issues. The fundamentals related to the maritime and naval environment underlie maritime and naval specific doctrines, from which the basic concepts of some amphibious and riverine specialized forces are derived. The specific concepts of the riverine operation related to the maritime, amphibious and riverine environment are applicable in the same specific ways to the maritime and amphibious operations. We believe that this scientific approach is appropriate due to the fact that the arguments we use will become the benchmarks for a specific doctrine of the amphibious and riverine components of the naval force, thereby providing a clear picture of the latter's understanding and application in the operations. Moreover, these concepts are useful to the bachelor degree, master's degree and doctoral students who approach the area referred to in order to use a uniformly structured language.*

Keywords: *riverine environment; riverine zone; riverine operations; riverine forces; riverine capabilities; artillery-carrier vessels; river patrol boat; marines.*

In this article, we will address some riverine operations specific aspects emphasizing the particularities of this operation by defining specific terms such as the riverine environment, the riverine operation zone, riverine capabilities and riverine forces. We intend that the structured information of this article will represent the bibliography for a specific doctrine of amphibious and riverine Navy components. They will constitute an overview on how to understand and apply it to the riverine operations.

According to some opinions taken from the international press, the riverine operations have become outdated and more fleets develop and involve riverine capabilities in such operations, but they are little addressed in the analysis and case studies. "Riverine operations receive limited coverage in contemporary naval analyses, yet remain key to a number of navies in addressing local maritime security issues"¹. We believe that holding the riverine forces has become appropriate to solve some regional security issues.

To begin with, we will define some conceptual terms: the riverine environment; the riverine zone; the riverine operations; the riverine capabilities; the riverine forces.

In our opinion, conducting operations in the riverine environment refers to a military action in fluvial, lagoon, marsh and marine environments, mainly the amphibious one, i.e. where the water surface is continuous or predominant and where the water surfaces and land are intertwined.

¹ Martin Ewence, *IHS Jane's Navy international*, november 2016, vol 121, issue 9, „Shallow debate”, p.26, “Riverine operations receive limited coverage in contemporary naval analyses, yet remain key a number of navies in addressing local maritime security issues.”

We found out that the riverine environment is often named the fluvial environment²; this is due to the possibilities offered by the waterways associated to the rivers, streams, channels, lakes and aquatories which are often used by the fluvial forces or by the amphibious capabilities that can operate in these complex environments. This is because the fluvial environment is a distinctive part of the riverine environment.

We believe that particularities of the amphibious environment are extending to the riverine environment, a finding made after analyzing the definition of the amphibious operation which states that this is carried from the sea by the landing forces in order to achieve tactical force projection ashore.

In the NATO doctrine concept, the riverine environment is the environment related to the three dimensions, surface, air and underwater corresponding to the deltas, rivers, channels, lakes, lagoons, an inland area, inside the coastline, bordered by these environments predominantly amphibious, which can achieve the communication lines³.

The riverine zone, in our opinion, can be considered an extension of the littoral area in the immediate vicinity of the coast⁴, consisting of the waters port, lagoon complex, lakes, deltas, rivers, channels and adjacent zones, which designated forces establish their support points that can harness the characteristics of this medium. The communication paths associated to the riverine area must allow surprise, increasing the offense tempo, the defense fragmentation, etc.

It is noted that these issues do not differ from the amphibious action particular features, because its environment is very similar to the riverine area. In the dedicated Romanian manual (i.e., the amphibious manual) the areas where the force projection is executed are those considered "permissive, potentially hostile or hostile⁵ environments similar to the descriptions of the Allied⁶ and US amphibious operations handbook⁷ which states that the amphibious operations are developed from the sea to the coast, including those land and airspace for the areas adjacent to the coast⁸, located near the area of influence of the engaged forces.

The US doctrine for riverine operations⁹ presented the riverine area where there are waterways but no roads. The forces acting on these routes must be specially equipped and must possess unique capabilities for the specific riverine environment to use and control the area and to prohibit an opponent to do so.

According to the national handbook on amphibious operations which describes the meaning of these terms, the riverine area is "the inner coast, coastal and delta comprising both land area and the river (flowing water), characterized by a limited number of lines (routes) of

² Martin Ewence, *op.cit.*, p.26, *apud* JP 3-06T *Riverine Operations Doctrine*, The US Department of the Navy's Joint Test Publication.

³ ATP-08(B), *Vol. I, Change 3, Doctrine for Amphibious Operations*, NSA, 2008, Chapter 11, *Riverine Operations*, 1101 (1), p. 11-1, "The riverine environment is an inland, coastal or delta area comprising both land and water, ...It is three-dimensional, with surface, sub-surface, and air environments. ... To control this key terrain, forces operating in a riverine environment must be able to control all three environments".

⁴ *Ibidem*, 1101 (2), p. 11-1, "Riverine areas may be considered as an extension of the littoral and therefore offer an important conduit for the conduct of amphibious operations".

⁵ *** F.N./ Im-11.1, *Manualul pentru operații amfibii*, București 2009, Capitolul I, secț. 1, art. 1, p. 9.

⁶ ATP-8(B), *Vol. I, Change 3, Doctrine for Amphibious Operations*, Navy Warfare Library, 2008, chapter I, art. 0101, "an environment ranging from permissive to hostile"

⁷ JP 3-02/2014, *Joint Doctrine for Amphibious Operations* conform <http://www.navy.mil> accesat la 01.07.2015.

⁸ <http://www.navy.mil>, *Joint Doctrine for Amphibious Operations*, JP 3-02/2014, p.I-1, Chapter 1, General, aln.a. accesat la 01.07.2015, english: "... launched from the sea by an amphibious force (AF) to conduct landing force (LF) operations within the littorals. The littorals include those land areas (and their adjacent sea and associated air space)".

⁹ http://edocs.nps.edu/dodpubs/topic/jointpubs/JP3/JP3_06T_9109.pdf, JP 3-06T *Riverine Operations Doctrine*, The US Department of the Navy's Joint Test Publication, accesat la 31.01.2017.

communications¹⁰. We note that this description is similar to the description given by the Allied amphibious operations handbook¹¹, this being achieved due to the fact that the national handbook implements the STANAG 1149, which refers to the allied doctrine for amphibious operations.

Sometimes the meaning of the phrases that match the two terms (the *riverine* and *river*) is not correctly interpreted, perhaps because of their similarity and/or wrong translation. In our opinion, due to the opportunities of the fluvial forces to travel on these waterways, was awarded a similar meaning in English meanings of the terms: *river*, *fluvial* and *riverine* derived from *river zone*, *fluvial operations*, *riverine operations* and others. We believe that these terms are not similar, but because of this confusion, we wanted to approach this topic for which we contributed interpretations, clarifications and doctrinal references.

We also mention that the meaning translating of the *riverine operations* the term *riverine* is not from the translation of *river*. This emerges from interpretations of the *Planning Principles for Riverine Operations* included in the NATO handbook in *Chapter XI, Riverine Operations, Section 3*¹², where among the characteristic factors of the riverine environment are present river along riverine landing areas-RLAs and unloading points in the riverine landing Sites-RLSs, which reinforce the belief that the two terms, *riverine* and *river* should not be used with the same meaning. Moreover, we identified in the Romanian language dictionary the definition of *riverine* as a region situated on the banks of a river, bordered or crossed by a watercourse "on the banks of a river, along a river, on the shore, crossed by water."¹³

We conclude by mentioning that the riverine zone belongs to a complex environment that includes the following elements: inner coastal area; coastline; Delta area; the river with the river arms and waterways; lagoon; lakes and ponds; near to the area comprising both the associated land and air space.

To present some specific aspects of the riverine operation we will make a brief insight into the content presented by the amphibious operation in various doctrines and handbooks. In an earlier US version of the manual for amphibious operations, the latter was defined as: „*a military operation launched from the sea by an amphibious force embarked on ships or craft with the primary purpose of introducing a landing force (LF) ashore to accomplish the assigned mission*”¹⁴.

According to JP 3-02, the Joint Doctrine for Amphibious Operations, the 2014 edition, the amphibious operation is defined as “*a military operation launched from the sea by an amphibious force (AF) to conduct landing force (LF) operations within the littorals. The littorals include those land areas (and their adjacent sea and associated air space) that are predominantly susceptible to engagement and influence from the sea*”¹⁵. There is a very small

¹⁰ *** *Manualul pentru operații amfibii*, București 2009, Capitolul XI, *Operații riverane*, secț. 1, *Generalități privind operațiile riverane*, art. 159, (1), p. 157.

¹¹ ATP-08(B), Vol. I, *Change 3, Doctrine for Amphibious Operations*, NSA, 2008.

¹² *Ibidem*, Chapter 11, *Riverine Operations*, section 3, 1107 (a), p. 11-4.

¹³ the Romanian language dictionary definition of *riveran* means „*situated on the banks of a body of water, along a river, on the shore, crossed by a water*”.

¹⁴ JP 3_02, *Joint Publication 3-02*, 2009, *Joint Doctrine for Amphibious Operations*, *General Concept* and Chapter I, pct. 1. „*An amphibious operation is a military operation launched from the sea by an amphibious force embarked in ships or craft with the primary purpose of introducing a landing force (LF) ashore to accomplish the assigned mission*”.

¹⁵ <http://www.navy.mil>, *Joint Doctrine for Amphibious Operations*, JP 3-02/2014, Chapter 1, General, al.a. p.I-1, accessed on 01.07.2015: “*An amphibious operation is a military operation launched from the sea by an amphibious force (AF) to conduct landing force (LF) operations within the littorals. The littorals include those land areas (and their adjacent sea and associated air space) that are predominantly susceptible to engagement and influence from the sea.*”

difference in the definition of the amphibious operation in two US doctrine versions, the latest showing some clarifying additions and refinements.

The NATO doctrine describes the amphibious operation as „*A military operation launched from the sea by a naval and landing force (LF) embarked on ships or craft, with the main purpose of projecting the LF ashore tactically into an environment ranging from permissive to hostile.*”¹⁶ The Romanian handbook for amphibious operations states that "Amphibious operations carry out the rapid development of combat power from the sea to the shore"¹⁷ which are elements that complement the image of an amphibious operation.

If we take into consideration the bibliographic national guide¹⁸ and the US amphibious operations doctrine¹⁹, in a comparative manner we may consider that the riverine operation represents the military action taking place in a geographical complex area, similar to the amphibious environment, conducted by the specially designed forces holding combat and transport specific means to this environment, for force projection to control the entire riverine areas. With this view in mind, we consider that the riverine operation can be launched from the sea, river, lakes or adjacent areas, on land, on water or in the air, as a standalone operation or complement to the amphibious operation or other joint operations.

To present a full picture of riverine operations after the opinions reviewed earlier, we still believe that the riverine operation is not the same as the fluvial operation; it is an operation carried out in a specific environment represented by the stretches of water from the seaside inside the baselines (internal waters), rivers, lakes, aquatories, channels, etc., that provide capabilities for the accomplishment and exploitation of natural communication ways by specially designed and equipped forces, i.e., the amphibious and riverine forces.

The riverine operation tries to exploit the force projection in the battle space represented by the riverine area. This can be achieved by applying the principles and tactics of fighting by the organized forces and able to act in a complex area of operations. The main feature of the riverine operations is that the attributes of command and control must belong to one commander²⁰ as opposed to the amphibious operation which in this respect is more complex, given the multiplicity of the participating forces.

These issues lead us to argue that the riverine operation has similar characteristics to the amphibious operation. The fact that the planning of the amphibious operation applies during the riverine operation confirms our statements and reinforces our beliefs.²¹

The riverine forces can integrate and employ various types of capabilities, combat means, weapons and specialized personnel who can be organized and integrated into heterogeneous structures of various sizes, able to achieve maneuver forces and means to exploit an opponent's weaknesses.

The riverine forces seek to exploit the potential of its weapons and long-range support; the riverine mobility is ensured by the action of naval, air and ground forces. It should be

¹⁶ ATP-08(B), Vol. I, Change 3, *Doctrine for Amphibious Operations*, NSA, 2008, Chapter I, art. 0101. „*A military operation launched from the sea by a naval and landing force (LF) embarked in ships or craft, with the principal purpose of projecting the LF ashore tactically into an environment ranging from permissive to hostile.*”

¹⁷ *** *Manualul pentru operații amfibii*, București 2009, Capitolul I, secț. 5, *Caracteristicile Operațiilor Amfibii* art. 6, (1b), p. 11.

¹⁸ *** F.N./ Im-11.1, *Manualul pentru operații amfibii*, București, 2009.

¹⁹ JP 3-02, *Joint Doctrine for Amphibious Operations*, 2014

²⁰ ATP-08(B), Vol. I, Change 3, *Doctrine for Amphibious Operations*, NSA, 2008, Chapter 11, Riverine Operations, 1101 (3a), p. 11-1, „*A single riverine force commander with his own AOOs, ... is key to the riverine concept.*”

²¹ *Ibidem*, section 3, 1106, p. 11-4, „*The planning tools and the estimate process described in AJP-3 equally apply to riverine operations. In addition, the principles and planning procedures for various land operations of war and types of amphibious operations should be applied in riverine operations, as appropriate.*”

noted that the riverine operations are distinct and have nothing in common with forcing and crossing the water courses.²²

The issues presented hereby represent the vision of NATO forces in riverine operations, but - in the same manner - represent the elements of a national concept on the action of forces in riverine operations, as specified in the manual for amphibious operations, namely in the riverine operations chapter (chap. XI).²³

In the US Navy, it is historically known that they have participated in the joint operations for landing to the opponent littoral with direct or indirect support of forces operating on the coast²⁴. The reputed Professor Milan Vego mentions that along with joint operations (major joint / combined operations²⁵: amphibious assaults, support of ground forces on the coast, amphibious withdrawal, amphibious defense and transport of troops and materiel, the US naval forces are able to carry out the riverine operations too.²⁶

In our opinion, the matters related to the military actions of the national forces in the riverine environment, the riverine operations type or using the riverine capabilities have not been debated at their true value. Having clarified the issues related to the meaning of specific terms, we believe it is handy to define the national forces which are easily identifiable as riverine forces.

The forces participating in such operations should be able to control the three environments and use the riverine communication routes for transporting riverine forces in amphibious environment-specific conditions. The amphibious landing force is not the only force that can perform riverine operations but, because of the nature of capabilities, they are able to lead or contribute with forces to riverine operations.²⁷

We believe that the riverine operations capitalize on the existing inland mobility way in that specific environment which typically imposes certain limitations. Therefore an amphibious force with support structures (i.e., naval, air and ground) or specific organic structures can be designated as the nucleus of a riverine force.

During the riverine operations, the potential of the riverine forces craft capabilities is used to support: transport; support during the assault; withdrawal of troops; redeployment; locking force; recognition; information support; execution of raids and incursions; introduction of other forces in battle; support through direct and indirect fire; logistic support; medical support; replenishment; command and control platform; combatant evacuation; search and rescue; non-combatant evacuation, humanitarian assistance, etc.

The capabilities engaged in the riverine operations represent those capacities of the involved forces that enable them to fulfill their assigned missions. In literature we can find different meanings of the term *capability*: "*being able to do something; capacity; aptitude*"²⁸. Regarding the riverine operation, we consider that *the riverine capability* term refers to the moral ability, intellectual, and quantitative aptitude of a riverine force, in close correlation with the main components of combat power "*physical; moral; cognitive and doctrinal*"²⁹.

²² ATP-08(B), Vol. I, Change 3, Doctrine for Amphibious Operations, NSA, 2008, Chapter 11, Riverine Operations, 1101 (1), p. 11-1.

²³ *** Manualul pentru operații amfibii, București 2009, Capitolul XI, Operații riverane, sect. 1, Generalități privind operațiile riverane, art. 159, (4 a, b), p. 158.

²⁴ Milan N.Vego, Joint operational warfare. Theory and practice, U.S. Naval War College-2007, Part V, p.V-113.

²⁵ Milan N.Vego, op.cit., p.V-97.

²⁶ Ibidem, p.V-119.

²⁷ ATP-08(B), Vol. I, Change 3, Doctrine for Amphibious Operations, NSA, 2008, art. 1101, Riverine Operations: "AF are not the only forces that can conduct riverine operations but, by nature of their training and equipment, they can be configured to conduct, or contribute to, riverine operations".

²⁸ <https://dexonline.ro> accesat la 11.01.2017.

²⁹ *** DAR, Doctrina Armatei României, 2012, art. 0122 (1), p.25.

In our view, the riverine force capabilities depend on factors that are influenced by their area of responsibility, the technology and doctrine promoted. In the case of riverine capabilities, we believe they are represented by the riverine forces those capabilities enabling it to meet the characteristics of battle components in the riverine environment.

We also believe that the riverine capabilities development requires special attention from the states in the geographical areas which require the existence of such capabilities in relationship with the amphibious capabilities, together contributing to the regional maritime security.

For the riverine capabilities development by the Romanian Armed Forces, the role of the Romanian Navy is essential due to the nature of its tasks and area of responsibility covering geographical areas characterized as amphibious and riverine. In our opinion, the amphibious and riverine capabilities can be identified in the Romanian Navy, in the River Flotilla subordinated capabilities: the monitor artillery carrier ships; the armoured river craft (III rd generation); the minesweeper gunboats river patrol boats; The Marine Infantry; the logistic and auxiliary ships.

The River Flotilla's responsibility area corresponds to the responsibility areas of the river artillery carrier ships intertwined with those of the Marine Infantry Battalion. If until 2016 the River Flotilla represented a fluvial force with extended responsibilities to the limit of gunboats, today the capability of this component was expanded by integrating Marines capabilities.

Thus, the amphibious landing capabilities have expanded their capabilities of fluvial force turning the latter into a genuine riverine force similar to the US Coastal Riverine Forces, with extensive fluvial capabilities. In our opinion it is necessary to harness this potential action in local environment by the riverine structures of the River Flotilla and develop the expeditionary capabilities which could represent the spearhead of the naval forces for amphibious operations in the multinational joint context or of security of the responsibility area.

In the riverine environment, the fluvial force is a national specific capability because of the responsibility area of the Romanian Navy on river, lagoon area, mouth of the Danube and the Danube Delta. In the Romanian geographic zones, the areas that meet all of the riverine environment are: the Delta; the lagoon area Razelm-Sinoe; the Danube River³⁰; inland and seaside waters; the Danube - Black Sea channel and port waters³¹; in fact, these represent the responsibility area of the Romanian Navy, assigned to the Naval Fleet and the River Flotilla.

The US Naval Historical and Heritage Command - NHHC³² describes the riverine operation as "any projection of sea power into inland waters including rivers that open to the sea"³³. The objectives of the operation can be: lines of communication; important points; economic objectives. The riverine operations zone can include in their opinion: islands; river basins; deltas; bays; lakes, swamps and flooded zones; etc.³⁴

Also, the NATO's Combined Joint Operations from the Sea Centre of Excellence-CJOS COE describes riverine forces as organized forces, trained and equipped to operate

³⁰ *** *Manualul pentru operații amfibii*, București 2009, Capitolul XI, *Operații riverane*, sect. 1, *Generalități privind operațiile riverane*, art. 159, (2), p. 157.

³¹ Author's note.

³² <https://www.history.navy.mil/>

³³ <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-us-navys-operations-inland-waters.html>, "any projection of sea power into inland waters including rivers that open to the sea".

³⁴ *Ibidem*, „Theatres of riverine confrontation may vary from an archipelago or river basin to deltas, bayous, swamps, rice paddies, streams, or lakes”.

inland³⁵. Admiral Ernest Eller, NHHC commander, referring to the riverine operation, considers that "the operation on, or projected from, inland waters has come to be called riverine warfare"³⁶. Craft and fighting means are adapted to respond to engage in a specific environment: increased mobility; speed; flexibility; versatility; surprise; practicality to build a series of principles for fighting virtue.

The riverine force structure can range from small structures (elements, groups) to large structures (battalions / battalions) and their equipment includes a wide range of capabilities, from boats and small boats of various sizes, to large battle ships, auxiliary and support ships³⁷. Some states with tradition in this respect have developed the riverine forces grouped in maritime and fluvial fleets, with their own command and control, combat support land, air and naval sensors, diversified weapons and logistic support, etc. The command and control structures can be embarked on ships or located base command posts on shore, acting on fixed or mobile positions.

Because of the diversification operation mode of riverine forces, in our view these forces can be considered extended capabilities to engage a potential enemy, classified into three broad categories: expeditionary capabilities, defense forces and special operations capabilities. The specific missions include the missions palette designated for the small structures characteristic of special and expeditionary forces: introducing and extracting small combat units; protecting ports or objectives; providing port security; boarding; performing search and rescue; ensuring tactical surveillance; conducting recognition, incursions, raids, etc.

The basic missions remain engaging combat forces, fire and security support by: engaging the naval and land enemy; supporting the ground forces which operate near the river; targeting; performing surveillance of communications; warning and information; discouraging illegal actions on the river; transporting forces and means on the river communication ways; protecting communication routes, inland waterways, ports and transport vessels; and so on.

Having presented a variety of descriptive and deductive arguments, as well as indicators referring to the riverine operation characteristics, we consider we have reached the goal of this article. Following the analysis performed on the chosen topic, we will conclude by briefly presenting some proposals to, and conclusions on, the described definitions.

The riverine environment relates to the environment on its three dimensions, surface, air and underwater, corresponding to the maritime zones, river, lagoon and delta near the coastline and within its limited amphibious environments predominantly, namely the interpenetration of land with water and its nearby areas.

The riverine area is an extension of the seacoast area inside the coast, consisting of: inner coastal area; coastline; Delta area; the river with the river arms and waterways; the lagoon complex; lakes and ponds; aquatory and inland waterways, areas near their area comprising both the related land and air space.

The riverine operation represents the military action taking place in a geographical complex area, called the riverine area, conducted by specially designed forces which possess the means of combat and special transport vehicles for force projection from the sea, river,

³⁵ NATO's Combined Joint Operations from the Sea Centre Of Excellence (CJOS COE): „*organised trained and equipped to a operate on inland waterways*” apud Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „*Shallow debate*”, p27.

³⁶ Rear admiral Ernest Eller, former head of the NHHC apud Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „*Shallow debate*”, p.27, „Operation on or projected from inland waters have come to be called *riverine warfare*”.

³⁷ FM 31-75, *Field Manual Riverine Warfare Headquarters*, Department of the Army, January 1971, cf. <https://www.history.navy.mil/research/library/online-reading-room/title-list-alphabetically/r/riverine-warfare-manual-1971.html>

lake or adjacent areas thereof, on land, on water or in the air, as standalone operation or in addition to the amphibious operation or other operations.

The riverine forces represent the force structures from small (elements, groups) to large structures (battalions / flotillas) equipped with a wide range of weapons, platforms of varying sizes from boats and boats to large battle ships, auxiliary and support, with its own command and control, combat support land, air and naval sensors, combat support and logistics to carry out military actions in the riverine environment.

We believe that because of issues related to strategy, geographic location, budget limitations and capabilities of naval forces belonging to a diversity of countries, there is not a single model of composition and destination of riverine forces. In some cases, their missions take into account issues of geographical, tailored opportunities for landlocked or simply to inland patrol.

At the end of this article, we strongly reassert that these concepts will be helpful to all undergraduate, postgraduate and doctoral students dealing with various issues on topics within the referred field, enabling them to use a uniform and structured language. Also, we are sure that the facts presented - specific for the riverine operation - will be a basis to develop a manual or part of a riverine operations doctrine.

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THE ROMANIAN RIVERINE CAPABILITIES

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Abstract: *In this article we aim to identify some correlations between the evolution, purpose, missions and particularities of the US riverine forces and the fluvial Romanian forces. For this purpose, we will make a brief overview of the history and tradition of the fluvial Romanian forces acting on river communications. By doing so, we will try to identify the opportunity to develop capabilities within the Romanian Navy to conduct riverine operations. In support of this endeavour we will rely on the analysis of particular situations of ongoing military operations in riverine environments conducted by the Romanian fluvial forces. Even if this capability is not fully developed nationally, we believe that by approaching these concepts (i.e., riverine operations, riverine forces), the Romanian Navy will be able to turn this potential into good account.*

Keywords: *The Romanian River Flotilla, riverine operations; riverine forces; riverine capabilities.*

Through this initiative we are trying to achieve some correlations between the evolution, destination, missions and particularities of using the capable forces in action in riverine environments.

Through the analysis of the evolution of the US riverine naval forces, we present some particular situations and issues about the possibilities for conducting riverine operations by the Romanian naval forces. Even if this capability is not fully developed nationally, we believe that by the approach of this concept, the Romanian naval forces will be able to capitalize this potential.

We identified the Riverine Romanian forces' origin in the Romanian fluvial forces, by using some arguments about the geographical features of the area, the composition and role of the fluvial forces. We believe that the responsibility area of the Romanian fluvial forces can be found in the riverine environments. In our view, the fluvial capabilities development by the traditional combat structures in the fluvial environments is an opportunity not to be overlooked by the Romanian Navy.

With the emergence of new types of security threats and the development of new capabilities in the permissive and hostile battlefield, the marine and fluvial specific environments, the missions of the subordinated Romanian Naval Forces structures (FNR) have diversified.¹ Of the military actions in sea and fluvial environments, developed by types of the Romanian Navy, a special place is held by the actions of the tactical landing forces, maritime and fluvial², historically subordinated both to the River Flotilla³ and the Maritime Fleet⁴.

¹ Lucian Valeriu SCIPANOV, *Rolul componentei amfibii a Forțelor Navale Române în contextul securității zonei extinse a Mării Negre*, Sesiunea de comunicări științifice a departamentului forțe navale-Strategii maritime la început de secol XXI-11.06.2015, p. 71-81, ISSN 2392-7399, ISSN-L 2392-7399.

² *** *Manualul pentru luptă a unităților și subunităților de infanterie marină*, Babadag, 2003, art. 314.

³ The fluvial forces structures; throughout their history, they have had different names: *the Flotilla Corps, the Underwater Operation and Defence Fleet, the River Flotilla, the Fluvial Brigade, the Fluvial-Maritime Brigade, the Danube Flotilla, the Fluvial Service*. (author's note)

⁴ The naval forces structures; throughout their history, they have had different names: *the Sea Division, the Maritime Naval Forces Command, the Maritime Division, the Maritime Fleet, the Naval Operational Command, the Sea Flotilla, the Naval Fleet, the Fleet Command, the Fleet*. (author's note)

The maritime landing force is the generic name assigned to the amphibious landing forces and represents the amphibious capability which - together with the naval forces - makes up the joint amphibious forces.⁵ Similarly to this concept, we believe the fluvial landing forces which are part of the fluvial landing capabilities⁶ alongside with the fluvial naval force represent the fluvial forces. Thus, fluvial landing is the generic name assigned to the fluvial landing forces consisting of land forces within a joint fluvial force.

The role and place of amphibious forces are identified both in the offensive and defensive actions, independently or in cooperation with other forces near the littoral.

To achieve the interoperability of national and allied forces, restructuring the FNR offered flexibility of the component forces. In the specific military actions conducted by specialized forces of the FNR, a special place is held by the fluvial forces actions. In the fluvial forces category there are structures of the Romanian River Flotilla. The restructuring of the River Flotilla envisaged the development of a modern, flexible and modular structure, whose capabilities can accomplish the complex tasks corresponding to potential threats. If national forces carry out the actions intended to reject the potential adversary's landing forces, a main role of the amphibious force (maritime and fluvial) is played by the Marine Infantry Battalion⁷ (MIB), a specialized force of FNR.

Within the landing tactical missions, the main targets are the landing rejection, destruction, neutralization, weakening, combat removal, disruption and enemy rejection. These tasks are described in the national books as *steps of defeat*⁸ and in the allied books are presented as *effects*⁹. In our opinion, reaching a defeat step represents a task carried out mission, the possibility to quantify the effect of the actions taken.

In the evolution of the tactical landing forces, maritime and fluvial, the latter have been assigned different names: *maritime fixed defence forces*; *fluvial fixed defence forces*¹⁰; *defence forces*; *debarcation forces/landing forces*; *assault forces*; *tactical assault force*; *amphibious landing force*¹¹, etc. Currently, the most common names identified in some doctrines are *amphibious landing forces* (Land Forces / LF) for the amphibious forces component and *riverine landing forces* for the riverine forces component (Riverine Forces).¹²

In our opinion, the Romanian River Flotilla subordinated forces types, the fluvial artillery carrying vessels and the Marines, in some cases can be assimilated amphibious and riverine capabilities. Therefore, we will further present the evolution aspects of the US riverine forces and certain aspects of the comparative Romanian fluvial forces evolution. They will constitute the references on the fluvial forces contribution to the consolidation of power by force projection in the riverine environment.

Historically, the evolution of modern riverine forces has had a permanent dynamic, at least in recent history. Worldwide, we have identified various examples of riparian forces action reminiscent of the French fleet action in the war in Indochina - 1947 which introduced

⁵ ****Manualul pentru operații amfibii*, București, 2009, cap.I, art 3.

⁶ ****Manualul pentru folosirea în luptă a navelor și unităților de nave purtătoare de artilerie*.

⁷ Ion CHIORCEA, Lucian Valeriu SCIPANOV, *The role of the Marines, in the context of extending the influence of the Alliance in the Black Sea area*. Sesiunea de Comunicări Științifice cu Participare Internațională, Strategii XXI, București 14-15 noiembrie, 2013, p. 196, ISSN 2285-8415, Editura Universității Naționale de Apărare „Carol I”, București.

⁸ *** *Manualul pentru folosirea în luptă a navelor și unităților de nave purtătoare de artilerie*, cap III, art. 63; *Manualul de planificare a operațiilor*, București, 2016, faza 3.a. *Analiza misiunii*, art. 0427, *Designul operației*, (5) *Stabilirea efectelor*; *Doctrina pentru managementul întrunit al țintelor*, București. 2011, art. 121.

⁹ COPD- *Allied Command Operations Comprehensive Operations Planning Directive*, February, 2010.

¹⁰ http://www.navy.ro/despre/organizare/istoric_bat307.php

¹¹ *** *Manualul pentru operații amfibii*, București, 2009, cap.1.1, art 4.

¹² ATP 8 (B), *Doctrine for Amphibious operations*, Navy Warfare Library, 2008, chapter I, art. 0101. „..... *naval and landing force (LF) embarked in ships or craft.....*”

a division assault on the Mekong and Red rivers¹³. Also, the action campaigns in support of the Portuguese colonies in Angola, Guinea, Mozambique by the Portuguese River Flotilla are mentioned¹⁴. But the largest shares belong to the US riverine forces.

During the well-known actions in Vietnam¹⁵, the American riverine forces landed a combat brigade and a division infantry.¹⁶ The forces acting mainly on the river with air and naval support during movement actions led to maintaining control of the riverine area, which emphasized the cooperation role of the forces engaged, outlining the actions of the joint forces operating in the riverine areas.

The withdrawal of the US forces after the Vietnam War had a major impact¹⁷ on riverine forces, found in both types of US Navy and US Army forces engaged in actions on Vietnamese rivers¹⁸. Many of the riverine forces' craft participating in Vietnam were sold or preserved.

The period of development of the riverine forces during the Vietnam War can be considered *the golden age*¹⁹ of modern history of these forces. However, not all American raids in Vietnam were successful. By the end of the war in 1975, the Vietnamese forces had gained control of the rivers and the delta. But the lessons learned and knowledge acquired thereby had the fundamentals developed by the American riverine forces doctrine, constantly updated, representing designs of reference for other similar forces.

Our geographical situation has allowed the widespread use of the river transport, shipping and combined with the rail. The Danube has always played an important role for the Romanian economy and the European landlocked countries. The earliest written references to the use of local maritime and river communication date back to the year 514 B.C. in the Persian campaign led by Darius Ist and the later campaigns led by Alexander the Great against the Thracians in the years 335 and 326 B.C. against the Geto-Dacians. The transport of troops and supplies was made with *tryrems* on the Black Sea and across the river with *monoxile*. These events emphasized the importance of fluvial communications for goods and troops.

The Romanian history provides many examples describing the dynamics of fluvial forces and their importance for the consolidation of the power of the Romanian state. Since the XIVth century, after the set up of the feudal states, Romanian rulers have created the military structures that operated on the Danube River, the river mouths and the Black Sea included.

This demonstrates the important role the fluvial and maritime communications played. The first sources, during the reign of Basarab Ist (1310-1352), mention transportation of goods on rivers and from one shore to another.²⁰

An important landmark in the historical evolution of the Romanian fluvial activity can be considered the XVth century, during the reign of Mircea the Elder (1386-1418) with the mention of the existence of the craft called *luntre* which performed trade on the Danube and Main rivers. This period marks the emergence of the Romanian maritime fleet, the founder of

¹³ Jacques Dalloz, Dictionnaire de la Guerre d'Indochine: 1945-1954, 2006, p.83.

¹⁴ The Portuguese Colonial War (1961-1974). Acted on the Zambezi, Cuando, Cuanza Zaire rivers in Angola, on Lake Nyasa of Mozambique, the fluvial system of Portuguese Guyana etc.

¹⁵ http://www.historia.ro/exclusiv_web/general/articol/r-zboiul-vietnam-o-tragedie-n-cinci-acte, in a larger sense called the Indochina war (1955-1975), in a more restrained sense the US intervention (1965-1973).

¹⁶ Centrul de studii și cercetări de istorie și teorie militară, *op.cit.*, Editura Militară, București, 1985, p.22.

¹⁷ Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „Shallow debate”, p.26.

¹⁸ CJOS COE apud Martin Ewence, *op.cit.*

¹⁹ Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „Shallow debate”, p.27, „Arguably, if there was ever a golden age of riverine operations in recent history it would have been during that conflict”.

²⁰ C-tin C. Giurescu, D. C. Giurescu, *Scurtă istorie a românilor*, Ed. Științifică și Enciclopedică, București, 1977, p. 94

which is considered to have been the ruler of the Romanian country. His followers²¹ used the craft called *monoxile* for river transport, as mentioned by the chroniclers.²²

In the naval battle of Belgrade (1456)²³, the contribution of the Transylvanian king Iancu de Hunedoara, alongside with the *Christian joint army*²⁴ had a decisive role against the Ottoman fleet.

In Moldavia, Alexandru cel Bun (1400-1432) is considered the precursor of the set up of the Moldavian fleet, followed by Stephen the Great (1457-1504), his successor in terms of the Naval Policy.²⁵

Pânzarele Moldovenesti of Stephen the Great which were built in shipyards in Chilia and Cetatea Albă continued the Romanian maritime and fluvial tradition: "They sailed into the Black Sea, Aegean and Mediterranean Sea, having hoisted the red flag with the famous *cap de bour*²⁶ logo". It is obvious that the peak of the Romanian naval fleet was reached during the reign of the Moldavian Prince Stefan the Great, who set up a system of naval bases and equipped the Fleet with cannons to prevent an imminent Ottoman invasion; moreover, he strengthened the country's naval power, an important element to the overall economic development.²⁷

The Prince of the First Unification of all Romanians, known as Michael the Brave (1593-1600), showed the same interest for the development of the Romanian naval power by building ships and harnessing rivers as lanes of communications to consolidate this status. The naval fleet used a type craft called *icii*²⁸ and galleys captured from the Ottomans.

Subsequently, we can identify a type craft called *șeice* during the reign of Constantin Brâncoveanu (1688-1714). These were used for trade-related transportation and ensurance on rivers and to the mouth of the Danube. The first mention of the Romanian river combat ship is identified with the establishment of the first segment of the Romanian Navy on October 22, 1860 on the initiative of Prince Alexandru Ioan Cuza (1859-1866), following the unification of the two core fleets²⁹ in Moldova³⁰ and the Romanian Country³¹ Corps Fleet³² based in Ismail³³. This occurred basically when setting up the first Romanian river force structure, the precursor of the current structure of the River Flotilla.³⁴

The modern history of the US fluvial forces is closely related to the developments of US riverine force structures, which experienced a series of transformations adapted to new mission related conceptual paradigms which made the transition from coastline defence (blue water missions)³⁵ to the riverine intervention (brown water missions)³⁶.

²¹ Vlad Dracul with his son, the future king Vlad Țepeș.

²² The Burgund knight Walerand de Wavrin – during the expedition conducted on the river by the Crusaders.

²³<http://www.istorie-pe-scurt.ro/asediul-belgradului-din-1456-cum-a-salvat-iancu-de-hunedoara-occidental-de-pericolul-otoman-2/>.

²⁴ Ibidem, Istoria românilor, februarie, 2014.

²⁵ <http://lnr-mangalia.ro/?p=560>,

²⁶ Ibidem

²⁷ Author's note

²⁸ <http://lnr-mangalia.ro/?p=560>,

²⁹ During the Fanariot epoch, king Alexandru Moruzi set up in Muntenia a fleet in which the ships were used for military purposes; in Moldavia there was a military fleet consisting in fluvial ships equipped with bronze cannons, etc.(author's note).

³⁰ Three ships with 104 crew members (author's note).

³¹ Three ships with 117 crew members (author's note).

³² According to the Law regarding the Army Regulation of the United Principalities of Romania, passed on May, 13, 1860.

³³ In 1864, the Flotilla Command moved from Ismail to Brăila (author's note).

³⁴ Hence the saying: *the Romanian Navy was born on the river* (author's note).

³⁵ <http://www.dictionary.com/browse/blue-water>

³⁶ <http://www.brownwater.net/Projects.asp>

In the US conception, at a certain time, acting on coastal ships such as Littoral Combat Ship (LCS) was the answer to threats in shallow waters. The LCS took over the frigates' role, which had historically operated along coastlines. But the LCS could not act near the coastlines and inland waters.

The US opportunity was the fluvial forces revival, by creating a mobile and flexible structure (i.e., riverine force)³⁷. This response came in reply to the model fluvial structures that were used in the American littoral operations (the golden age). The monitors' power was replaced by the versatility of small armoured boats, patrol boats³⁸, platforms and support ships handled by specialized personnel from the Navy or the Marines.

Since 2006, the US Navy has seized the opportunity to expand the riverine and littoral capabilities, reviving the tradition held by the Navy Riverine Forces, thereby establishing a new structure of the riverine forces: The Riverine Group One (RIVGRU 1) deployed in Norfolk, Virginia, in the Navy Expeditionary Combat Command³⁹ subordinated within the US Navy (the Navy's Fleet Forces Command). In 2006, the RIVGRU I had the first squadron structure (Riverine Squadron 1) while in 2006 it was composed of three structures with riverine capabilities (i.e., squadrons): Riverine Squadron 1 (May 2006 - Norfolk, Virginia)⁴⁰; RIVRON 2 (February 2007 - Camp Lejeune)⁴¹ and RIVRON 3 (Naval Weapons Station - October 2007 Yorktown, Virginia)⁴². The establishment of these structures resulted into a new riverine forces capabilities transformation, which brought together sailors from different backgrounds, to accomplish the transition from missions in maritime environments (blue water) into the littoral and coastal environments (brown water) missions. These – alongside with the marines structures (i.e., the Marine Corps) were trained to execute expeditionary missions.

In the US action in Iraq⁴³, during the Iraqi Freedom Operation⁴⁴, on the Tigris and Euphrates rivers, the US riverine forces emplaced all three battalions (Riverine Squadron - RIVRONS)⁴⁵, each with 230 soldiers operating 12 boats simultaneously⁴⁶, under USN's Naval Expeditionary Combat Command – NECC. These battalions rotated action between 2007-2011. The missions were riverine security and denial of insurgent actions.⁴⁷

After the Iraqi Freedom Operation in August 2012 a new structure of forces, the *Coastal Riverine Force - CRF/CORIVFOR* was set up within the US forces⁴⁸. Achieved by combining elements of RIVGRU and the Maritime Expeditionary Security Group (MESG), it is able to execute the offensive and defensive missions in riverine operations whose area of responsibility are the ports, rivers, bays, coastal and inland surface waters.⁴⁹

The CORIVFOR is subordinated to the Navy Expeditionary Combat Command (NECC) of the US Navy. The CORIVFOR consists of two groups of riverine forces. The CORIVGRU 1 (Norfolk deployed in Imperial Beach, California) is in charge of: the CORIVRON 1 (deployed to the Naval Air Station North Island); the CORIVRON 11 (Naval

³⁷ <http://cimsec.org/mobile-riverine-force-example-riverine-ops-21st-century>, By Rick Chersicla, 27 sept 2016, *The Mobile Riverine Force as an Example for Riverine Ops in the 21st Century*.

³⁸ *Ibidem*.

³⁹ <http://www.public.navy.mil/necc/Pages/default.aspx>

⁴⁰ http://www.navy.mil/submit/display.asp?story_id=32756

⁴¹ http://www.navy.mil/submit/display.asp?story_id=27601

⁴² http://www.navy.mil/submit/display.asp?story_id=36696

⁴³ Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „Shallow debate”, p. 29.

⁴⁴ <http://www.history.com/this-day-in-history/bush-announces-the-launch-of-operation-iraqi-freedom>

⁴⁵ http://www.navy.mil/submit/display.asp?story_id=32756

⁴⁶ Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „Shallow debate”, p. 29.

⁴⁷ *Ibidem*, p. 30.

⁴⁸ http://www.navy.mil/submit/display.asp?story_id=67545

⁴⁹ according to the CRF apud Martin Ewence, IHS Jane's Navy international, november 2016, vol 121, issue 9, „Shallow debate”, p. 30.

Weapons Station Seal deployed Beach); the CORIVRON 3 (deployed in Imperial Beach, California) and the group of riverine forces in Guam (Guam Coastal Riverine Group Detachment Guam-CRG-1 DET). The CORIVGRU 2 (dislocated in Portsmouth, Virginia) is in charge of structures with riverine capabilities (Coastal Riverine Squadrons / Coastal Riverine Group), stationed in Norfolk Naval Shipyard, Joint Expeditionary Base Little Creek-Fort Story, Bahrain, Newport, Rhode Island and Jacksonville, Florida.⁵⁰

The CORIVFOR main mission is to ensure maritime security in all phases of its specific military actions: defence of important objectives; protection of critical maritime infrastructure (ports, shipyards) both inland and coastal, and in order to carry out offensive operations.

The modern history of the Romanian fluvial forces began with the commissioning of four monitors⁵¹ built in Trieste in the Navy, in 1907. These were assigned to the Danube Squadrons.⁵²

In 1918, the Danube Squadron increased by receiving for repair works three monitor type vessels, Transylvania, Bessarabia and Bukovina from the former Austro-Hungarian empire.⁵³ In our opinion, the commissioning of these ships into the naval forces contributed to a significant increase of the riverine combat potential, and Romania became a strong European naval power.

The Ships belonging to the Romanian fluvial forces participated in the major historic events of the Romanian people: the Independence War of 1877; the Balkan Wars of 1913; World War I and World War II⁵⁴, which represented the period of the Romanian fluvial supremacy.

After the Romanian monitors' *Brătianu, Lahovari, Ardealul, Basarabia* and *Bucovina* abusive capture (1944)⁵⁵, following the signing of the Restitution Convention of the Romanian merchant and military ships⁵⁶ on September 11, 1945, the Soviet government returned the five monitors.

In 1957, the monitors belonging to the Romanian fluvial forces were preserved, and in 1959-1962 were decommissioned.⁵⁷ In 1962-1995, due to political-military events, the importance of fluvial forces stagnated. In the 1998, the Danube Flotilla entered a comprehensive structural reorganization and assimilated the 24th River Brigade⁵⁸ and 27th River and Maritime Brigade⁵⁹.

The name of the Danube Flotilla returns in the 1995⁶⁰ and in the 2000 it became the River Flotilla "MK". In the 2005, The River Flotilla „Mihail Kogălniceanu" turns into the „River Component" under the authority of the Naval Operational Command, after 2006, renamed as the „Fluvial Service" under the Fleet Command subordination. In 2016, the

⁵⁰ <http://www.public.navy.mil/NECC/crg2/Pages/default.aspx>

⁵¹ botezate Lahovari, Brătianu, Catargiu și Kogălniceanu, asamblate și montate la Arsenalul Marinei de la Galați, n.a.

⁵² http://www.navy.ro/media/revista_mr/numere/almanah2010.pdf

⁵³ http://www.navy.ro/despre/organizare/flotila_fluviala/istoric.php

⁵⁴ *Ibidem*.

⁵⁵ The Armistice Convention IAW http://www.historia.ro/exclusiv_web/general/articol/conven-ia-armisti-iu-12-septembrie-1944; Romania was left with only 32 towing ships, 332 barges and two sea vessels (author's note).

⁵⁶ On September 11, 1945, the Retrocession Convention of the Romanian merchant and military ships was signed; 18 maritime and fluvial vessels, out of which 5 monitor ships, 23 merchant ships were retrocessed to Romania, IAW http://www.navy.ro/despre/organizare/flotila_fluviala/istoric.php.

⁵⁷ http://www.navy.ro/despre/organizare/istoric_div67.php

⁵⁸ Set up in 1962 in Brăila (author's note).

⁵⁹ Set up in 1983 in Tulcea (author's note).

⁶⁰ "Mihail Kogălniceanu" Danube Flotilla comprised 2 brigade commands, monitor ships, 2nd and 3rd generation armoured fast boats, minesweeper fast boats, harbour minesweepers, logistic units, signal subunits, marine infantry battalion and fluvial combat diver unit (author's note).

„Fluvial Service” turns into the „River Flotilla”, resumed the Marine Infantry Battalion subordination, which in 2004-2015 was subordinated to other structures of the Romanian Navy.

The River Flotilla missions are the result of the composition of the main missions of the constituent forces. Thus, in peacetime the following missions can be executed:

- The assessment of risk factors and implementation of space management of the fluvial area of responsibility;
- The Operative Planning use of the fluvial Forces in peacetime, crisis or in war time;
- The specific conduct of fluvial Forces in the military actions independently and / in cooperation with other structures of the national defence system or within the Alliance;
- The conduct of the search, rescue, evacuation and humanitarian operations in case of disasters or natural calamities in the fluvial area;
- The Coast Guard support for the implementation of measures to verify, control and confiscate illegal shipments of weapons and ammunition;
- The participation in the strategic and operational military and civil defence in the fluvial area of responsibility;
- The command of fluvial forces during exercises and tactical applications;
- The monitoring and supervision enforcement of fluvial communications in the fluvial area of responsibility;
- The command of fluvial force actions to prevent the hostile acts of violation of sovereignty and of Romania’s territorial integrity in its area of responsibility;
- The management of search and rescue missions on the Danube;
- The conduct of the fluvial force actions for fluvial communications defence in order to maintain freedom of navigation; organization and implementation of appropriate measures for the protection of fluvial transport.⁶¹

The River Flotilla wartime missions are the following:

- Support to the Land Forces (fire, logistics, transport) for leading the offensive or defensive military actions along the river and the Danube Delta;
- Command of the Fluvial Forces to reject aggression from the river and destruction (neutralization) of vessels, combat means and transport of the opponent;
- Command of the fluvial transport ships defence during march and at points of loading / unloading;
- Command of the Fluvial Forces during defence actions of the military and economic area of responsibility;
- The amphibious landing prohibition on the littoral and the mouth of the Danube river;
- Command of the defence actions of the fluvial communications and ensuring the freedom of navigation on the Danube River.⁶²

The River Flotilla’s history is basically shaped by the evolution of the existing structures: the artillery carrying ships battalion which is composed of artillery carrying ships monitor-type; the armoured river craft-type (3rd Generation); the minesweeper gunboats river patrol-type; The Marine Infantry Battalion; the logistic and auxiliary ships.

We can stress out that in the fluvial forces, over time other types of naval forces have existed: the small armoured river craft battalion (1st and 2nd Generation); the fluvial minesweeper battalions; the coastal minesweeper battalions; the river divers subunits; logistic battalions; communication centres; depots and supporting structures⁶³.

⁶¹ http://www.navy.ro/despre/organizare/flotila_fluiala/misiuni.php

⁶² *Ibidem.*

⁶³ Author’s note

The part of the River Fleet history has been shaped by the history of the artillery carrying ships battalion; the tactical unit consists of uniting the two types of capabilities of fluvial vessels belonging to the same kind of forces: the artillery carrying monitor ships-type and the armoured river craft-type (III rd Generation).

The Romanian monitors modern history marked the modern stage of fluvial forces development. This type of ship is the most powerful capability of the Romanian fluvial forces. The artillery carrying ships monitor-type unit was established on 30 March 1995 in Braila, and constituted the 24 Brigade of the Danube Flotilla.⁶⁴

The monitors battalion, as it was called, was made up at that time by two monitor projects 1316⁶⁵. The third monitor was commissioned to the Navy in 1996⁶⁶.

Another fluvial capability of the fluvial forces are the armoured river craft-type (III rd Generation). The armoured river craft unit generically referred to the big armored river craft was born in Tulcea in 1986; it consisted of six artillery carrying project 1048 ships, which were built between 1986-1991 in Mangalia Shipyard: "Grivița"-94; "Rahova"-176; "Opanez"-177; "Smârdan"-178; "Posada"-179; "Rovine"-180.

The first big armoured craft was a prototype, built on a body of "stealth" without superstructure. The concept is found in the US Seal forces holding a craft with a similar aerodynamic prototype as the Romanian style.

In December 15, 2000, the monitor unit and the armoured river craft unit put together their capabilities in a new structure consisting of a section of three monitors and a section of five armoured river craft in the 67 artillery carrying ships battalion, which is currently subordinated to the River Flotilla.⁶⁷

The river patrol boats are the specific capability the river forces raised by restructuring the well-known minesweeper units from Giurgiu, Braila, Galati and Tulcea. The river patrol boats history originally started in 1959 at Giurgiu with the fluvial minesweeper unit.⁶⁸

The unit had the wooden body ships built at Oltenița Shipyard between 1956-1959⁶⁹ and was organized in three sections of two ships each. In 1960 the unit was moved from Giurgiu to Sulina and then to Tulcea.

The wooden river minesweeper boats were replaced by a new generation of modern aluminium river patrol boats. The 822 project ships were built at Turnu Severin Shipyard during 1977-1981. On 06/01/2002, the first reorganization of the river minesweepers unit boats occurred, on which occasion the ships were deployed in the Braila military port.

On March 1, 2005, the new reorganization led to the establishment of the new river patrol unit boats consisting of two sections, deployed in Braila and Tulcea. The current river patrol boats unit consists of fluvial minesweeper boats and river patrol gunboats with minesweeper possibilities.

The most specialized capability of the fluvial forces, which is specially trained to act in the amphibious and riverine environments, is the Marine Infantry. Historically, the river Marine Infantry belongs to fluvial forces as a tactical landing force. The Romanian Marines emerged following the events of World War I, which comprises the Landing Battalion and Marching Group Companies.

They were the precursor of the marines, the amphibious tactical defence and the amphibious landing forces. The link between marines and fluvial forces dates back to the First

⁶⁴ Government Order No. 4, issued 03.02.1995 by the minister of National Defence.

⁶⁵ „MIHAIL KOGĂLNICEANU” and „ION C. BRĂȚIANU”, author’s note

⁶⁶ On May, 30, 1996 the monitor „LASCĂR CATARGIU” is commissioned (author’s note).

⁶⁷ http://www.navy.ro/despre/organizare/flotila_fluvala/misiuni.php

⁶⁸ http://www.navy.ro/despre/organizare/istoric_div88.php

⁶⁹ <http://lnr-mangalia.ro/?p=560>

World War⁷⁰ when their joint action in the Danube Delta and on the Danube river, through the execution of landings, led to the control of the area of responsibility of the Romanian Navy⁷¹.

During the Second World War, the Marines Battalion was designed to defend the fluvial area and in 1941 was turned into the Marines Regiment⁷². On March, 21, 1944, three battalions intended to defend the Delta (tactical squad) and a company to carry out the amphibious landing activities (landing forces) and other subunits were reinstated.⁷³

Nationally, the reinstated structures of the Marines were considered an operational necessity so that the Marines Battalion was established in 1971 under the Navy Command. The first garrison of the Marines Infantry Battalion deployment was in 2 MAI town; later in 1973, the Marines Infantry Battalion was relocated in Babadag town, due to the advantages of the position offered by the new garrison to conduct the specific missions.

In May, 1996, by Presidential Decree, the Marine Infantry Battalion received the Combat Flag⁷⁴. Except for the 2004-2016 period of time, the Marine Infantry Battalion was subordinated to the fluvial force.

Alongside the warships, the River Flotilla also includes some logistic and auxiliary vessels (e.g. tugs, barges, floating barracks, etc.).

We believe that the nowadays fluvial forces, the artillery carrying ship units, fluvial minesweeper boats and river patrol gunboats with the minesweeper possibilities, may constitute the naval force within an amphibious and riverine force. Also, the Marines can play the role of the amphibious landing force⁷⁵ within an amphibious force and the riverine landing force of the riverine force.

The riverine force is in our opinion a force structure that operates with a wide range of weapons and platforms varying from small boats to large battle ships, auxiliary and support ships, able to carry out military actions in the riverine area.

The riverine environment represents in our opinion the area for all three dimensions (i.e., surface, air and underwater environment) relevant maritime, fluvial, lagoon, delta, coastal and inside, including aquatory and waterways areas. The riverine area is in our opinion: the inner coastal zone; the coastline; the Delta area; the Fluvial area, its arms and waterways; the lagoon complex; lakes and ponds; aquatory and inland waterways that include their area of land and associated airspace.

Consequently, we believe that if the fluvial forces, the artillery carrying ship units, the fluvial minesweeper boats and the river patrol gunboats with the minesweeper possibilities operating their own capabilities in the riverine environments are a riverine force. In a similar manner, we believe that if the Marines operate their own capabilities in riverine environments, they are also a riverine force.

It seems that in the case where the aforementioned types of forces operating along the riverine environments specific geography of the area of responsibility, they represent a strong national riverine force. Incidentally, one of the tasks of the artillery carrying ships is "*the support of some army ground forces operating near the river*"⁷⁶.

⁷⁰ In early 1918, the marine infantry participated alongside with the Romanian Operational Fleet, in the seizure of the 3 ports south of Bessarabia, i.e., Ismail, Chilia Nouă and Vâlcov (author's note).

⁷¹ http://www.navy.ro/despre/organizare/istoric_bat307.php

⁷² http://www.navy.ro/despre/organizare/istoric_bat307.php

⁷³ General Staff Order No. 76402 of 21.03.1944, on 01.04.1940 by High Royal Decree No. 635; the BIM was set up, and on 01.05.1941 by High Royal Decree No. 1527, the BIM becomes RgIM.

⁷⁴ DECREE No. 176 of 27 May 1996, regarding the granting of the combat flag to the Marine Infantry 307 Battalion, based on Art. 99 para. (1) Of the Constitution of Romania and on Art. 1 of the Law No. 34/1995.

⁷⁵ *** Manualul pentru luptă a unităților și subunităților de infanterie marină, Babadag, 2003, art. 314.

⁷⁶ *Misiuni ale navelor purtătoare de artilerie pentru apărarea României și a aliaților săi în cadrul acțiunii Forțelor Navale* conform: *Manualul pentru folosirea în luptă a navelor și unităților de nave purtătoare de artilerie*, cap I, art. 4(3d.)

To support the land forces, the methods and procedures of the artillery carrying ships action are organized and implemented in cooperation with all forces acting on fluvial or littoral area.⁷⁷

The fact that in the River Flotilla along with the carrying artillery ships there also is a land component, represented by the Marines, gives its full possibilities of action in the riverine environment. The River Flotilla's area of responsibility was extended from the limit of the artillery carrying ships weapons ranging to the Marines area in which the Marines can operate with the artillery carrying ships fire support and acting independently.

Today, the River Flotilla is known as a powerful fluvial force which in our opinion is a significant national capability. The capability to operate in the fluvial area allows fluvial forces to expand the possibilities of acting in riverine environments. Therefore at present we believe that the River Flotilla is a great tactical unit that can execute the military actions (riverine operations) in the riverine environment through any kind of subordinated force.

The riverine area of responsibility owned by the Romanian Navy is the Danube Delta, Razim-Sinoe lagoon area, sectors on the Danube River areas, inland and coastal waters, the Danube-Black Sea channel, and the maritime and fluvial aquatories.

We consider that for the Romanian Navy it would be appropriate to develop the marines' structure, specially designed to conduct amphibious actions, like the existing forces model (i.e., Marines Infantry Battalion), and specialized in the amphibious and riverine environment. These could otherwise constitute the nucleus of a Marine Infantry Regiment.

Most of the 21st century threats, terrorism and piracy, have taken place in the coastal areas. Consequently, the Navy is the force which must devote time and money to develop the adequate amphibious and riverine capacities to handle threats in amphibious and riverine areas.

Arguments for which a riverine force is a power projection of means beyond the riverine zone are that if a naval fluvial force can act within the range of weaponry, the ground forces comprised in the fluvial amphibious force can act beyond these limits.

For example, the Marines using amphibious special means in shallow waters, on the fluvial communications, ports, lakes, specific areas, the riverine environment is an effective means of power projection beyond the limit of this area. Therefore, a joint force, the naval forces and marines with complementary capabilities is a unique full capability in the riverine area.

The riverine operations may occur at the lowest tactical level of action. We believe that throughout history, this level of military art has been crucial for strengthening operational and strategic objectives that military planners have not ignored. Their emergence was due to the importance given to forces acting on the riverine area (e.g. river, Delta, lakes, ports, etc.) within an operation.

The uniqueness of Romania's geographical area has drawn attention to this zone. The tradition, the lessons learned, the personnel and infrastructure are some of the constituents of the Romanian naval power manifested in the riverine area and, from our point of view, they consolidate the status of the Romanian naval power.

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THE EMERGENCE AND EVOLUTION OF FISCAL PARADISES

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Abstract: In the global economic competition, that includes states with different tax regimes, reducing taxes has become a key to success for large companies and tax havens are the simplest legal form. In their defence, the little "paradises" show to apply strict rules against money laundering and check that firms wishing to use their services.

Keywords: fiscal paradises, offshore companies, tax evasion, taxes.

Introduction

Any taxpayer is tempted to pay taxes as low as possible or not to pay any tax. To take advantage of this human weakness, over time there have been areas that have created legislation to attract financial funds, paying outstanding facilities, of which the most important is the exemption from taxes or their level extremely low. These territories are called in literature fiscal "*tax havens*".¹

The term "tax haven" is taken from English, the word "tax-haven", which means "refuge", "port tax". In the literature (legal and financial) and there are few timid attempts to define "tax havens".

"Tax haven" can be defined as the geographic area (represented by the territory of a country or only part of the territory of a state) inside which many and various tax incentives are given: not taxed (or these are constituted as reduced and cover only some restricted categories of income or assets), ensures – at a high level – banking secrecy is stimulated development of trade and transfer of benefits, there are no restrictions on foreign exchange etc.

The idea of tax exemption is not new. Historians remember the wise Plato, who used a non-profit campaign to finance his famous university in Ancient Greece.

Around this time, the small neighbouring islands to Athens hoarded goods by sea or sail to avoid the tax of 2% on imports and exports respectively, charged to the city.

In the heyday of the Roman Empire, the Greek island of Delos was used by the wealthy Romans to avoid legally paid taxes and other duties provided by the Latin law.

Nowadays the state's fiscal policy generates an economic and financial context, more or less favourable to citizens, a set of replicas of their tax burden and hence to taxation income from various activities.

This leads to the attractiveness of tax havens by more natural or legal persons in order to place the earned investments and profits to avoid taxation in the country of residence and to apply a more advantageous tax regime.

Tax and financial havens' existence is closely linked to the history of capitalism, the French industrial revolution representing an important milestone, thereby accelerating the emergence and development of tax havens.

¹ Lăcrița Grigorie, "*Taxation, controversies and solutions*" Irecson Publishing House, Bucharest, 2007, p. 9.

Characteristics of tax havens

Tax havens have some prevalent characteristics:

a) Reduced taxes. Most countries considered to be tax havens do not impose any income tax or impose taxes only on certain categories of income; they may also impose a tax cut, compared to the taxes imposed by the countries of origin of those who use tax havens.

b) Banking secrecy. If the general banking secrecy is hard to penetrate in any legislation, however, most countries around the world will not protect such information when an investigation is requested by a foreign government, especially when these investigations are based on a bilateral or multilateral legal assistance.

c) Relative importance of banking. In most countries tax havens pursue a policy of encouraging foreign banking. This is done by introducing a distinction between banking inhabitants of that country and of foreigners. Generally speaking, the activity of foreign citizens is not subject to requirements regarding reserve funds, nor is it to foreign exchange contracts or acting on other controls.

d) Modern means of communication. Most of the countries considered tax havens possess excellent communication facilities, particularly telephony, cable TV, telex, linking them to the most important countries from which funds are deposited.

e) Lack of control over the currency. Many tax havens exercise dual currency control system that distinguishes between residents and non-residents and between local currency and foreign currency. The general rule is that monetary and exchange control covers only residents of the tax haven country, not non-citizens. However, in the local currency, foreigners must also comply with local restrictions. A company established in a tax haven country which is a non-resident owner and a commercial customer operating outside the tax haven is considered as a separate regime on foreign exchange control.

f) Promotional advertising. Most tax havens use publicity on this issue because of the advantages it presents for attracting foreign investment. Many countries also organize international seminars and their officials collaborate in the preparation of articles that praise the virtues of their country as a tax haven. In addition, many countries see the financial activity of tax havens a relatively stable source of income and seek to actively promote it by all means.

g) Operation in a stable economic and political system. Any businessman, any investor wants to work in a country that has these characteristics. Nobody wants to see their money lost because governments change, because the system of government or the economic instability can bring with it inflation, economic regression and many other issues.

h) Ability to diversify the object of activity without any restriction. Offshore financial centres frequently allow diversification of the objects of a company's operation; this is not possible in the home country of the investor. Business taxation and painful restrictions in their home country can find countless business solutions in offshore centres, thus avoiding many of the problems. It should be noted that the formalities of a company's business diversification are achieved without too much bureaucracy. Fear of excessive regulations is a major attraction to this area and the reason why the registration of banks, insurance companies or maritime transport companies has become an important pillar of the offshore industry. A great wave of financial instruments for the offshore moves for the same reason. This wave includes investment funds closed payment instruments, the Eurodollar trade.

i) Possibility of better expansion. Big corporations see offshore centres as something indispensable for their expansion into new markets at competitive costs. For example, some offshore financial centres dominate international activities such as shipping, air transport, financial and captive insurance companies. Currently there are about one million offshore companies worldwide, and many of the corporations on the world market operate these

centres (IBM and Microsoft in Dublin, Orient Express and American Airlines in Bermuda, GE and CNN in Cyprus).

In conclusion, offshore companies constitute a legal working instrument meant to optimize businesses in terms of fiscal security.

In other words, the use of tax havens is simple: "pay less and earn more."

Offshore companies in tax havens

In recent years, the controversial term "tax haven" was turned into much more precious "*offshore financial centre*"² and this has occurred because the main instrument used in doing business in a fiscal paradise is represented by the offshore company.

In common English, "*offshore*" means "*beyond the shore*". In the economic language this specialized term designates activities outside of the state in which the performers are resident.

An "*offshore company*"³ is a company registered in a country or a dependent territory of a country with an autonomous legislation, but not economic activities in that territory.⁴

Company or offshore company is a financial instrument used for planning and avoidance of taxes, increasing business profitability, participating (as a shareholder or partner) in business management, with full freedom of movement of financial resources and anonymous owner.

Types of companies and the purpose of establishing their offshore business

Offshore companies are set up to achieve the following transactions:

- Commercial transactions abroad;
- Investment through an offshore company;
- Records of ships and aircraft;
- Purchase of properties;
- Setup of holding companies;
- Establishment of insurance companies;
- Establishment of banks;
- Reasons of reputation;
- Placement of personal wealth in a safe environment;
- Protection of property.

The establishment of a highly diversified offshore company is one of the most important aspects of the company's foundation, whereas in the context of globalization of trade it is considered that an undertaking that ignores tax haven condemns the latter to non-competitiveness. This enables the offshore company to be able above all to be aware of the real interests.

The theory of economics distinguishes several types of offshore companies located in tax havens, as follows:

- Offshore trading companies – are used to reduce the profits of parent companies located in areas with high tax.

² Bişa, Cristian, Costea Ionuţ, Capotă Mihaela, Dăncău Bogdan, "*Using tax havens - between legal tax evasion and tax fraud*" Publishing B-T Publishing House, Bucharest, 2005, p. 35.

³ Bişa, Cristian, Costea Ionuţ, Capotă Mihaela, Dăncău Bogdan, "*Using tax havens - between legal tax evasion and tax fraud*" Publishing B-T Publishing House, Bucharest, 2005, p. 35.

⁴ Buziunescu, Radu, "*Internal evasion and international*", Publishing Universitaria, Craiova, 2007, p. 20.

– Offshore Investment Companies – for tax havens in some areas, the authorities can provide tax incentives to entrepreneurs who invest in particular areas. The objectives of such facilities are: to develop areas, to attract capital and technology, to rebalance trade balance, to regulate susceptible labour emigration.

– Offshore Credit Companies – ownership of an offshore credit company offers the possibility to minimize fees for loans and borrowings, and improve financial and credit services offered to customers;

– Offshore Holding – it is used to finance activities of its subsidiaries, under different jurisdictions, enabling them to operate tax reductions related to interest on loans given by the parent company. In this case, the holding company is established in an offshore area, where it will not pay other taxes. The profit made by this method can be used to finance activities carried out by the holding company, or reinvest it for other purposes.

– Offshore banks – captive banks are those banks working under the cover of other banks. Within the model of captive insurance companies, an important group may establish its own bank, located in a tax haven, and operate in an offshore regime. The bank may be engaged in the "central treasury management group assembly."

– Captive Foreign Insurance Companies – companies with captive insurance are defined as companies owned or controlled by another organization, whose purpose is, first, to cover the necessary insurance subject to more restrictive conditions, even in tax havens requiring a license, and to ensure a minimum quite important capital.

All these companies offer a range of facilities: an offshore company registered in a tax haven is the only economic entity with a wide range of uses that are set specifically by the owners and managers, whose responsibility is to assess the advantages and disadvantages of offshore companies.

Legal operations in offshore tax havens

The main feature of offshore entities is to avoid tax obligations by legal means. Therefore, this avoidance cannot face the notion of tax evasion. In this regard, the Dictionary of Economics of the famous magazine "The Economist" defined tax evasion as: *the failure to pay the tax liability of a natural or legal person by the state through fraudulent methods, such as not declaring profits, reducing the real value of profit by increasing spending or decreasing revenue by fake or forgery, registration of false fiscal balances and balance sheets, etc. "*

On the other hand, according to the same dictionary, legal avoidance of the tax burden (legal tax evasion) is structuring the financial activities in accordance with the law in order to minimize tax liability.

The creation and activity of offshore companies are therefore legal operations to avoid the tax and non-tax fiscal regime guaranteed by law and not the result of fraudulent machinations, as it is widely believed. Moreover, the large accounting firms have developed their own departments dealing exclusively with operations in tax havens for their interested customers.

Although the general impression is that tax havens are engaged primarily in money "laundering" of any origin without asking their clients embarrassing questions, in fact in offshore centres respectable regulations are tougher than in developed countries. In this regard, it should be pointed out that most governments of the offshore countries carefully supervise the activity in the territorial licensed banks and approve with maximum exigency the setup of new financial institutions.

The 1991 bankruptcy of the Bank of International Credit and Commerce as well as other events were the circumstances that led to tightening oversight of offshore activities to

identify potential financial swindlers. However, increased interest in offshore companies was directly proportional to speeding up economic crime. Tax havens, by the facilities available to their customers, represent for most financial scams true "oases whitening" of money from various activities prohibited by law.

In this context, offshore companies represent a real "magnet" for people willing not only to protect the benefits of the high taxation, but also for those who hope to cover illegal profits or substantial revenues by or on behalf of some naivety.

The use of offshore companies, financial facilities, banking and tax havens are a current international practice and not always without risk. International organizations try to prevent the use of tax havens as the basis for criminal activities, as well as the obvious migration of taxpayers and of major financial institutions.

The operation of offshore companies: legality versus unlawfulness

Offshore companies can be used in legal tax planning schemes. However, like any tool, they can also be used in illegal operations such as dirty money laundering or tax evasion. The legality of certain transactions made by an offshore company is defined by the legislation of the country where it is registered, by the laws of the transaction other member-country and by international treaties.

Many developed countries apply certain limitations relating to the operations carried out by offshore companies, but a complete ban is almost never used. Our approach means we can offer the necessary and careful legal guidance before any important transaction is made, thus avoiding any illegality or irregularity.

Many countries apply certain limitations for residents on the use of offshore companies (the so-called anti-offshore regulations). Complete ban is almost never used. However, there are certain discriminatory restrictions; for example, tax increases for offshore operations for residents of the country and for the application of additional regulations on currency exchange. Many large companies in Romania are major shareholders in such offshore companies.

The transfer of shares from Romania to offshore companies has intensified with tax increases from 10% to 16%. Moreover, these companies are active in the local stock market and begin to dominate local affairs.

There are currently more than one million international offshore companies registered in countries in which the tax system is more flexible and which offers privacy for shareholders.

The same goes if you opt for an anonymous company (whose owners' name does not appear in the registration certificate) or a company rated by the owner's name included in the registration certificate.

If a group of shareholders will decide how they will divide the actions and functions, this is recorded in the Statute of the organization.

The Memorandum of Association - is a document signed by the company's shareholders, setting out the areas in which it will operate. The company will be authorized to carry out only those activities mentioned in this document. Some tax havens plead for the insertion of a paragraph in this document, generally stating that the company is entitled to pursue those activities in terms of management; this can bring significant profits.

Requiring additional services (secretariat, bank account): for the setup of offshore companies, they need:

- Headquarters in the territory / country
- An accounting firm to keep the books in the country / territory (Andorra, Hong Kong)

- Holding a general meeting every year (Ireland, Hong-Kong, Nauru, Bermuda)
- A representative of the country / territory (British Virgin Islands)
- Installation of administration and management in the country / territory (Uruguay)
- Conducting the largest share of assets abroad
- Proof of the bank shareholders' references (Gibraltar)

CONCLUSIONS

From the content of this article it can be concluded that there are many advantages, benefits, reasons why business proprietors can call for the option of setting up offshore companies in an attempt to avoid excessive charges and the divestment of a significant profit to the state.

It is also clear that this type of company hides many loopholes for launching a whole series of illegal business if they are not carefully supervised by the authorities, due to the increased lax policy privacy, not in the least because the regulations are extremely lax.

So, millions of dollars come annually not from the state budget, but go to anonymous accounts hidden in the Bahamas, Cyprus, Liechtenstein. Romanian businessmen hide behind secret accounts. 80% of the foreign investment coming into Romania belong to companies in areas with minimal or zero taxation.

Following the main features of tax havens addressed and explained in detail, I can conclude that the so-called "tax-havens" are a way of circumventing the law of the country where investors run their business, making them a means of sheltering. In the context of the globalization of trade, a business that ignores tax havens is thereby condemned to non-competitiveness.

States considered to be tax havens for all types of companies in order to allow beneficiaries to reduce and thus even suppress fees entirely are placed within the law and in a manner virtually impossible to control by the tax services in the country of origin.

Roughly speaking, there are around 60 tax havens worldwide. Some are gone, as is the case of Lebanon, reborn from the ashes. Others, such as Switzerland, are endangered, or have recently disappeared, as Hong Kong.

Simultaneously, other places are born as havens. However, even if tax havens disappeared, something similar would emerge immediately in their place because they are an inevitable product of globalization. However, economists believe that by the existence of tax havens big countries protect governments from the danger of a huge financial surplus.

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TAX FRAUD

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Abstract: *The tax fraud is committed by the flagrant violation of the law, taking advantage of the specific way in which is taxed profit which consists of maintaining a prudent legal limit of evasion. Tax fraud is not just a national phenomenon ant it is manifested by reduction of industrial processes and complex legal national and international arrangements making hard to identify it.*

Keywords: *tax evasion, tax fraud, traditional fraud, legal fraud, underground economy.*

Unlike legal tax avoidance which consists of maintaining a prudent legal limit of evasion, the tax fraud is committed by the flagrant violation of the law, taking advantage of the specific way in which is imposing. Typically, the imposition is determined based on official accounting records and other supporting documents to the concerned obligation to communicate to all the relevant bodies depending on the state tax liability. With regard to the tax fraud in legal doctrine it is considered that represents a "cancer" affecting the civil and political society, which would be about 20% of the budget of developed countries, reaching to an impressionable percent in the developing countries¹. To defrauding the IRS², the taxpayer uses numerous techniques, from the most basic to the most sophisticated or the artisan to the industrial.

Examples of fraud range from a mere craft real price decrease of selling a building or import of goods without being declared to record revenue accounting omission or increasing the deductible expenses. A form of tax evasion and undeclared work is, allowing a run to get him that undeclared income.

Tax fraud is manifested by reduction of industrial processes and complex legal arrangements ingenious (purchases without an invoice, etc.).

Tax fraud is not just a national phenomenon; it acquires international dimensions of double taxation arising from the game. The origin of the phenomenon of double taxation is the action of two or more fiscal powers.

To avoid this competition, the state tax taxpayer refuge in protected havens using various techniques. In Europe we rely on three mechanisms and three types of companies installed in tax havens: the holding company, the basic company and the fictitious company.

For the beginning I will present some expressions proper of tax fraud. Tax fraud is qualified by the law for its gravity as a misdemeanours or crimes and is punishable by administrative, pecuniary or custodial measures. It emphasizes inequality between the fraudulent taxpayers and the honest people who pay their tax obligations into economy who distorts free competition. Tax fraud is as old as the tax law and the used procedures have become more ingenious and sophisticated, making hard to identify it.

Due to the diversity of illegally methods for taxpayers to evade of tax obligations, make it possible to achieve a classification of phenomena of tax fraud, as follows: traditional fraud, legal fraud, accounting fraud, fraudulent evasion.

¹ Dumitru A.P. Florescu, Theodor Mrejeru, Dan Bucur Marius Pantea, Vasile Manea Andreea Martinescu, *Tax evasion*, Legal Publishing House, 2013, p. 23.

² IRS- Internal Revenue Service.

The traditional fraud consists of partial or total theft from tax obligations the preparation and submission of incorrect documents or submit abstention of the documents required by law.

The legal fraud that involves concealing of the true nature of a body or a contract in order to get rid of certain tax consequences; it is a common practice when a company with significant outstanding obligations is declared bankrupt or is liquidated, but exists another company with the same shareholders, with the same management and the same registered office and object of activity; another example is carousel fraud, when recorded several companies, including one ghost that requiring repayment of VAT and then it is closed

The accounting fraud which creates the appearance of a regular accounting, but used false documents to spending increase or revenues decrease to keeping a double record (real and fictional), falsification of balance sheets. The ultimate goal of this practice is to reduce income taxable and the fixing of a deducted increased VAT.

The fraudulent evasion by evaluation is a process for diminution in value of inventories, the overstatement of losses and provisions.

In my opinion the underground economy represents all economic activities organized in violation of social and economic laws, aiming to generate revenues that cannot be controlled by the state. The emergence of the underground economy coincides with the creation of the state and the imposition of rules, norms and laws, and development of the phenomenon is correlated with the historical stages of development of the state. The scope of the underground economy includes varied practices, namely: tax fraud, illegal labour, drug trafficking, arms trafficking, corruption, prostitution and a number of domestic workers and unregistered work. Among the components of the national economy, for the first time the most widespread have been not registration activities, tax evasion and undeclared work. Assessing the economy into GDP (the gross domestic product) varies depending on the methods used. The National Statistical Committee estimates for recent years that are generally low, 5-10% of GDP, constant suffering some growth, but economic experts in fighting crime and journalists have appreciated much higher levels, that over 30% of GDP.³

The illegal labour represents another varied practices underground economy form. The official statistics have recorded that an increased number of unemployed have a significant permanently revenue and the employed people have not provide any form of satisfaction. However, even in these conditions, an important part of the population has no natural reaction in such circumstances, looking for a job, and in many cases a procedural issue, possibly as a transitional version towards to a new period of unemployment. Without generalizing and, especially, not to mention of entire professional categories remaining outside of the labour market or dependents because of age, health or other particular conditions prevented the realization of income must be emphasized that there is obviously a big difference between those official revenue actually achieved. One of the reasons that motivate this is illegal work. The expression, by the otherwise is suggestive, defines the activity carried out without respecting the regulations imposed by labour law and tax. The scope is very wide: housework; household; community; through work in agriculture; construction; various industries, including high tech. Practicing of undeclared motivation, clandestine, is equally varied.

Economic specifics of times, traditions or laws are elements that determine the behaviour of citizens.

The economic real situation at a given time require an immediate reaction from customers for adapting of some practices that are still influences by the legal regulations governing the companies and established the boundary between what is accepted and what is rejected by the society. The existence of a high level of shadow economy (according to the

³ [http://www.HotNews.ro/Economie | Finance & Banks](http://www.HotNews.ro/Economie|Finance&Banks)

recent calculations for over 50% of GDP)⁴ is primarily a result of the operation of such companies.

From so far experience it is shown that "the great specialists" in these practices are moreover foreigners. The huge proceeds in foreign currency of the underground economy are exchanged and transferred, with pretty much ease, abroad, without any consideration of these transfers, thus leading to imbalance of payments. The extent of the phenomenon should be stopped by the responsible factors with improving the legislation, so that if it cannot be undone, at least it is kept under control.

Criminal activities

Organised crime is defined by the existence of criminal groups, structured on the idea accomplishment illegal activities, conspiracy, aimed mainly at obtaining illicit profits at very high rates.

It is the most dangerous component of the underground economy and includes: the production, distribution and consumption of drugs, arms trafficking, trafficking in nuclear materials, stolen cars, prostitution, human trafficking and corruption.

The facts themselves represent a illegal employment, but at analyzing the phenomenon, it appears like a recognized threat of the society and is matched by an economic threat, just as serious, even if it is less obvious and studied. The criminal activities such as drug trafficking, weapons, nuclear material, are a reality and behind of these activities are moving huge sums, generating financial flows. An important feature of criminal organized activity is the cross-border character, so I can conclude that the main international links in the underground economy are those generated by organized crime.

The purpose of these actions is obviously important to generate revenues and place them in the formal economy.

The lack of legal regulations, the existing shortcomings, combined with the lack of cooperation of the responsible factors for setting up the companies has been speculated by various traders that have opened up a lot of companies, who, although apparently it works legally, these has not been found at the declared premises. Like the ghosts, these companies exist but these are not seen, these cannot be touched. Therefore they are not in the real economy, on the surface, their place of action being represented by the underground economy; I can say the invisible economy. In my opinion, such companies are big players in the tax evasion, the smuggling, fraudulent bankruptcy and other offences regarded as generating dirty money and more undesirable effects. Establishment and operation of company's ghost is not a scope in itself but it is a method for circumvent the law, most often in the tax area. Most often such companies are created especially for the trading of large illegal business, after which they disappear from the business world. The patrons open other companies, used for the same purpose, after that, these are again abandoned. This is a cyclic mode of tax avoidance for phantom companies.

Another method of the tax fraud is the fraudulent bankruptcy that represents the act of a trader to manage incorrectly a heritage available to defraud the creditors. With this method the managers cease the payments and declare the bankrupt to avoid the fiscal tax and more financial obligations. Fraudulent bankruptcy draws the following facts: tampering or falsification of records; destruction, concealment or decreasing asset; fraudulent declaration of liabilities that appear non-existent debt.

⁴ Eugen Deliman, Bene Florin Gheorghe, *VAT tax fraud operations intracomunitare*, Editura C. H.Beck, 2014, p. 31.

Committing of acts of fraudulent bankruptcy is punishable by imprisonment, with disqualification from further of the trader profession and a prohibition on going into the financial field again. I said that the market economy involves the competition, which means that participants in the business life have to face the competitive environment, which causes sometimes financial difficulties. Some of financial difficulties represent to reaching the position to reorganize specific activity or to cease to exist in the economic field. The decision to insolvency is sprinkled, in most cases with events or acts, some of which may be characterized as lawfully and others as unlawfully. If the borrower violates the established rules for economic activities and therefore end up with to not being able to meet outstanding debts, the bankruptcy may be considered illicit. The bankruptcies caused by the disregard of trade rules can only be considered fraud only if the perpetrator doing intentional that subjective act. In such cases, the financial analysts consider that is the possibility to talk about the crime of fraudulent bankruptcy, criminally cases. These are the most cases of the infringements insolvency by the borrower with the financial problems.

The forgery, theft or destruction of company records or assigning a portion of the company's assets to liabilities or provision in the company's records or in other financial records, of a sum not due is one way the offence of fraudulent bankruptcy provided and punished by law. In this form it is not necessary to have declared bankruptcy, but have established a state of insolvency of commercial company, by any means, arising from registers deficient contracts obtained by fraudulent means (forgery, use of forgery, fraud), unable payment of maturity loans, whether the payments have been made until the investigation⁵.

The prevention and combating fraud is a part of a tax system. The tax system of many countries contain measures that are not specifically intended to counter tax evasion or avoidance international but have a strong impact on international operations. These measures are particularly interested to evasion avoidance and have influence on the internal legal order, It take various forms, know the different administrative or legal developments processes, requiring important (basic) preparedness. Preparations ahead in one country may coincide sometimes with the development process in other jurisdictions. This is due to the fact that both are based on the same principle trends.

Thus, the methods of interpretation in certain country rely on attempts to establish the fiscal reality, while in other countries the same result is obtained by the methods indicated by the preliminary actions for the interpretation of the fiscal prevision. This overlap of measures are based on the same principles, but takes different forms, renders a classification based on the nature legislative, administrative or judicial of each individual technique. Among the relevant general principles to principal measures against evasion, interpretation and evaluation of important tax facts constitute the key point of each element of most important legal and administrative attempts to combat decreasing tax burden by means other than fraud. In the practice two different approaches can be identified, namely: legal theory and economic theory.

These two guidelines also respond to two ways of interpreting the relationship between private law and tax law.

Legal theory, which is traditional, is based on the principle of dominant importance of the letter of law, and respect for legal forms (private law) principle chosen by the taxpayer to conduct its business. A transaction is seen through the effects its produce in the private law and that these forms are used to obtain a different economic result according to the legislature's intention. Thus, according to this principle, if a taxpayer enters into a agreement for a some years in order to avoid taxation of capital gains, the rule of law will be broken, but

⁵ <http://www.business24.ro>

the attitude, the behaviour of the taxpayer will be fully justified and the effects of the transaction will be recognized by the law. I conclude that the various measures have been adopted in some of the countries to distinguish between the acceptable and unacceptable tax avoidance. This approach is clearly formalistic protection for the taxpayer, who was running the business based on the expected reaction of the courts. About the cost of this choice, it is estimated and depends on transactions that it makes up. On the other hand, it is also true that countries that adopt a formalistic method have their own uncertainty. It is due the traditional interpretation of the law. Surely this zone there is also a benefit for the state: there are no doubts on estimated income, this gives stability to the national budget. Previous theory is inconsistent with the economic approach which was developed by the countries that were concerned about a strong justice under economic criteria.

The legal addressing is characteristic especially those countries whose legal system is distinguished by a clear classification in terms of civil law transactions and whose constitutional principles establish an exclusive jurisdiction severe laws in revenue, accompanied by a ban analogy in this matter. In countries with a regional system of private law or its own legal system of a state within a federation, the preference for private law transaction effects cannot be always applied consistently. Indeed, in some instances the application of the definitions of private law to classify transactions for tax purposes proves to be useless since it leads to different tax treatments of the transaction the same way, if incurred by taxpayers who are resident in different regions or different states of the same federation.⁶

In conclusion, I can say that the U.E economic and financial crisis has had serious budgetary and social consequences in the member states. It is necessary that public finances law to be reviewed urgently to support social protection systems and public services, to limit refinancing costs borne by the state and other public authorities, and to avoid negative spills over the effects on the rest of the economy. By reducing fraud and the tax avoidance, the Europe member states can increase their revenues from taxes, which will also give greater leeway to restructure their tax systems in a way that will promote the more good growth. Also, reduce fraud and evasion in the Europe member states can support efforts that aim to lighten the tax burden of the low earners and the most vulnerable groups. The effect is the evading tax payment in part or in full of amounts related to the hidden base, wilfully, unlawfully outlawed. The failure to pay all or part of amounts due as a tax, is not because of a shortage of cash, but as a result of the unlawful concealment of taxable weight and the size of the tax base that is tax evasion.

There are legal provisions and regulations for tax correction and the mitigation of the tax base. This decrease is actually a feature offered by tax law to achieve a economic objective and is not a tax evasion.

The legal arrangement give the possibility of combinations of facilities, the legal incentives are rather a manifestation of the tax consultant, based on knowledge of tax laws or the tax references. The taxation is a matter of engineering in its positive sense, the legal tax information processing technology in order to maximize the tax advantage for a individual or an organization. The State, through its fiscal policy based on the principles of taxation, promotes fiscal measures to yielding diminishing tax evasion. The radical reform of the tax collection system to ensure growth in revenue collected and decrease administrative costs, should focus on the following components⁷:

- Increasing the level of voluntary compliance of taxpayers, particularly by simplifying the tax code and the code of fiscal procedure and through an extensive program of total transparency of expenditure;

⁶ Adrian Mihai Hotca, *Fraudulent bankruptcy*, Publishing C.H.Beck, 2008, p. 76.

⁷ Nicoleta Christus, *Tax evasion and money laundering*, Publishing Hamangiu, 2007, p. 56.

- Increasing the efficiency and reduce costs, in particular by strengthening number of tax;
- Computerization and aggressive promotion of electronic declarations and payments;
- Increasing the quality of staff engaged in tax collection and reduces corruption.

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SEAD OR JOINT SEAD – A NATO PERSPECTIVE

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Abstract: *The new NATO approach to SEAD pushes way forward its traditional boundaries and opens new horizons, formalising innovative and daring ways of smartly combining complementary military capabilities, being them land, sea-surface, air, or space based, kinetic or non-kinetic, lethal or non-lethal, piloted or remotely piloted, to directly or indirectly suppress enemy air defences land and sea-surface based, ensuring as much freedom of manoeuvre as possible for own forces across the whole spectrum of operational domains (land, air, maritime, space, electromagnetic and informational). This paper tries to explain how and, more importantly, why SEAD evolved through times, permanently reevaluating its effectiveness and looking for reaching the right balance between expenditures and military outcomes SEAD could possibly deliver. As its direct effects are very difficult to observe and quantify, one of the most challenging job was to evaluate SEAD, before designing development strategies. Once this acknowledged, SEAD practitioners and technicians converged to the same conclusion: advanced technology must be combined with innovation and smart ideas to effectively engage the enemy in the future, to ensure survivability of own forces and to directly contribute to achieving overall military objectives.*

Keywords: *suppression of enemy air defence, joint, NATO, kinetic, non-kinetic, lethal, non-lethal.*

This paper shows the evolution in time of the concepts that had influenced and continue to influence the suppression of enemy air defence (SEAD) mission, being radiography of its changes in the last twenty-five years. The paper does not look to chronologically enumerate these changes, but tries to identify the main ideas that had marked the evolution of SEAD and the generating, justifying and enhancing factors of this trend.

Essentially, this evolution does not represent some novelties for any of us as we have recognised them during the political, social and technological transformations that we have witnessed over time. Each of us adapted to the situation by applying the principles that were born and crystallised during this evolutionary process, realising that they bring essential changes and therefore must be integrated in our way of fighting no matter the service or branch we belong to.

What was missing – or necessary to be achieved – was to adapt these principles to the current and future battle space. This happened in time by modifying the doctrinal framework.

The doctrine is defined as a set of fundamental principles that guide the way of conducting military operations in order to achieve an objective. It is authoritative, but needs one's own judgement in order to be effectively applied in practice.

The SEAD doctrinal framework represents those elements that define, restrain or open new ways of approaching the fundamental principles, generally accepted as valid, regarding the efficiently conduct of SEAD missions. The officially declared aim is that of allowing the efficient, coordinated and interoperable use of NATO SEAD capabilities thus creating the necessary conditions to successfully conducting the operations of friendly forces assuring in the same time the requested degree of protection.¹ The Allied Joint Doctrine for Air and

¹ NATO SEAD Policy, 2014.

Space Operations defines SEAD as “*that activity which neutralizes, temporarily degrades or destroys adversary air defences by destructive and/or disruptive means.*”² On its turn, the NATO publication “*Electronic Warfare in Air Operations*” specifies that SEAD missions are a form of Offensive Counter air operations conducted in order to achieve the air power needed to conduct other operations.³ Thus, this document uses the basics imposed by the Allied Joint Air and Space Doctrine, but it opens the road for approaching SEAD in a larger framework, proactively rather than reactively, allowing the interpretation of SEAD as a form of military action that substantially prepares the efficiency of other operations regardless the environment where these operations take place.

Although SEAD is still perceived as an air specific mission (an offensive one), the effect gamut that it generates enlarges even more due to the definition of SEAD presented in the NATO SEAD Policy: “*activities conducted in order to neutralize or temporarily degrade the enemy air defence by using destructive and/or disarticulating means*”.⁴

The new US approaches related to the use of military forces - which were adopted by NATO as well – and the adaptation of the Alliance to the new security environment through successive adjustments of its Strategic Concept, together with the continuous requirement to balance the needs with the existing capabilities, have imposed the necessity of a comprehensive, integrated approach to military operations. From a theoretical perspective, this practically means that together with the achieving of a military objective in a classical way, the effects obtained in different environments, including the cognitive one, are diverse and each of them is being able, in combination with other distinct effect(s), to lead to the achievement of other military objectives. In mathematical terms, the actions conducted to obtain the A, B and C objectives could have as an effect the unforeseen achievement of an objective D.

In order to reduce the expenditures in terms of resources or to achieve more military objectives using the same set of resources it is necessary to develop an integrated, joint and innovating approach to military operations. This is imposed and facilitated by the impressive technological advances of the last two decades, especially in the communication and IT domain that provide the capability to conduct complex analyses and rapid interconnected coordination. It is expected that any future doctrinal document will approach this phenomenon in a different and innovating manner. For instance, the NATO publication „*Electronic Warfare in Air Operations*” went even further considering SEAD as one of the means to dominate the electromagnetic environment (EME) in order to diminish military casualties and losses.

The road has already been opened by the “*Transformation Concept for Electronic Warfare*”⁵ which established that the EME represents a distinctive operational medium. This document includes SEAD as one of the forms of military actions which – through its both components, lethal and non-lethal – obeys the laws and principles which govern the EME as operational medium. Also, it shows the powerful relationship between SEAD and other military functions as Electronic Warfare (EW) – especially its offensive branch, the Electronic Attack, the Electronic Surveillance and SIGINT – and communication support (radio, radio relays, data links, wi-fi, digital and satellite communications). This relationship is presented as an enhancing factor for other types of military operations with strategic and operational effects (INFOOPS, Targeting, and Computer Network Operations) which emphasizes the need for a joint approach of SEAD missions. The document makes some suggestions regarding the coordination of this entire set of military functions which are seen as

² Allied Joint Doctrine for Air and Space Operations, 2016.

³ Electronic Warfare in Air Operations, 2010.

⁴ NATO SEAD Policy, 2014.

⁵ Military Committee Transformation Concept for Electronic Warfare, 2007.

“operations in the electromagnetic environment” by introducing the term *“Electromagnetic Battle Staff (EMB)”*.

The concept has been introduced in the NATO policies regarding the EW and SIGINT domains and further developed in the associated doctrines. An important element of these conceptual developments is represented by the formalisation of the way of exercising the command and control (C2) of military operation. The concept is extremely flexible – it imposes only some requirements on the way the C2 should be organised (from Electronic Warfare Coordination Cell-type structure to SIGINT and EW Operations Centre and EMB). Also, it emphasizes the fact that the main role of these structures is to coordinate, integrate, deconflict and use the existing assets in an efficient manner, their command attributes (the conduct of current operations) being limited and flexibly adapted to the current situation in the battle space.

As a direct consequence of these conceptual changes, the NATO SEAD policy has been thought from this innovating perspective that tries to evolve from the resource-oriented perspective of the Cold War era to the objective-oriented, integrated and joint perspective which is capable to answer to the requirements of the new NATO Strategic Concept. The declared aim is that of facilitating the efficient, interoperable and coordinated use of the SEAD capabilities of the Alliance in order to create the necessary conditions for the successful conduct of the military operations, including a proper level of protection for own forces.⁶

In this context, the document establishes the complex role of SEAD missions in assuring the freedom of manoeuvre in five operational domains: air, land, sea, cyber and electromagnetic. Thus, the SEAD missions will not be limited to the direct protection of an aircraft combat formation or to the creation of favourable air situations (e.g., air superiority), but they will substantially contribute to blocking the enemy’s actions in the air, on the land or on the sea by inhibiting its access to information (the information domain), by the impossibility of an efficient use of its electronic assets⁷ (the electromagnetic domain) and by degrading its capacity to efficiently command and control its own forces.

The role of SEAD in an objective/effects-oriented perspective in the overall framework of the electromagnetic operations is depicted in the figure below:

⁶ NATO Suppression of Enemy Air Defences (SEAD) Policy, 2014

⁷ Electromagnetic Spectrum Denial (ESD)

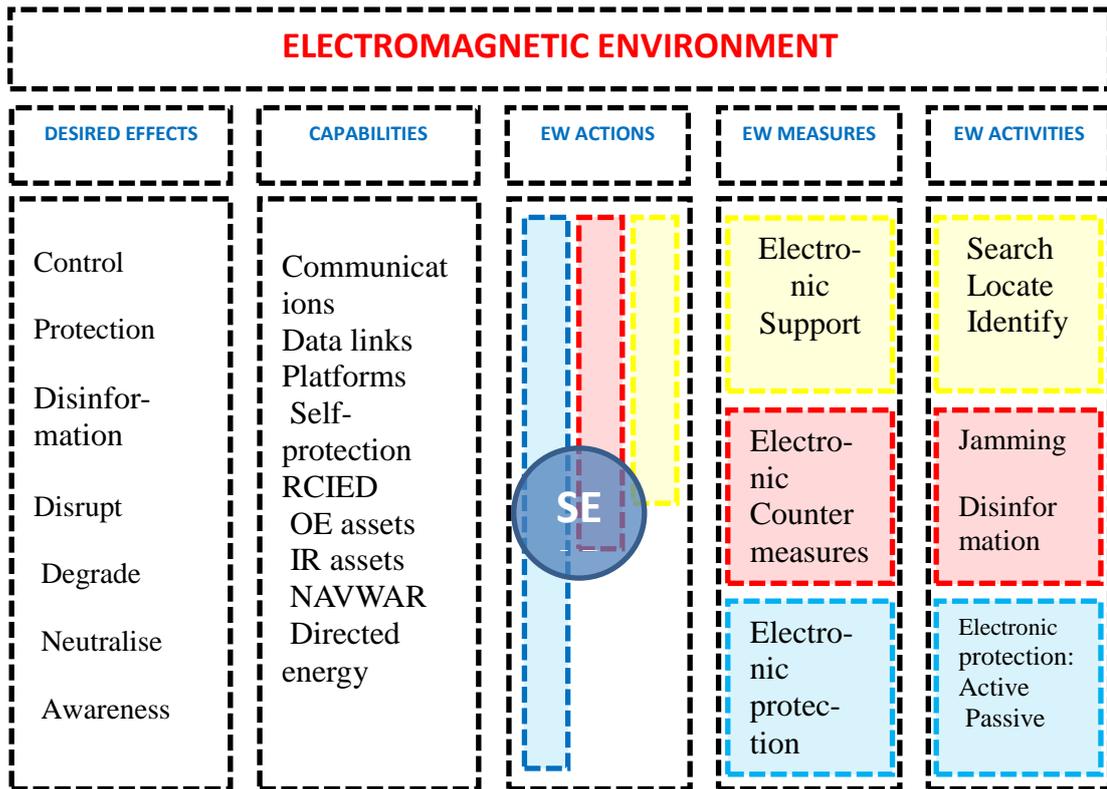


Figure 1: SEAD in an EMO context

The term “Joint SEAD” is supported by three fundamental principles which guide the planning and conduct of this type of mission as well as the development process of future capabilities:

- SEAD is an integrated element of military operations in all the operational domains: the current situation needs a synchronization of combat actions in all these domains. The SEAD missions transcend all these domains through the fact that all the forces can contribute to SEAD missions in order to provide the freedom of manoeuvre for friendly air assets while, on their turn, the surface forces benefit of the air support in a coordinated manner;
- SEAD has the unchallenged attribute of being an enabler for all the other elements of a Joint Force;
- SEAD missions are joint and multinational *de facto* as long as all the services have their own SEAD capabilities and their coordinated use requires the employment of assets belonging to member states.

Being given all the operational requirements of the modern battle space that have been taken into account when the SEAD missions were reconsidered, the combat assets that participate to SEAD missions should be capable to generate effects other than the traditional ones associated to its role (e.g., electronic attack using Active Electronic Scanned Array technology). In the same time, the traditional effects of SEAD could be provided through the employment of other assets than the specialised air assets, thus becoming necessary to take into account other military functions (e.g., combat assets belonging to the Land and/or Maritime Components) for an efficient and synchronised planning process.

The next figure shows the way in which the traditional combat assets could be employed in a complementary manner in order to achieve effects that contribute to temporary inhibit an air defence system.

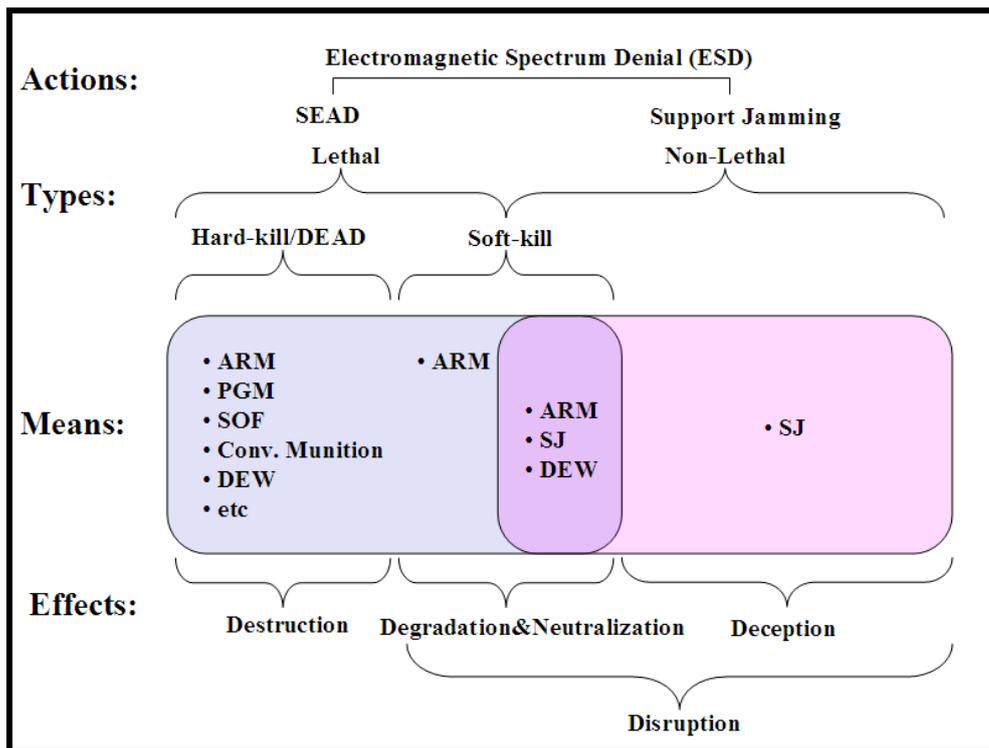


Figure 2: SEAD in an ESD context

All these conceptual revisions have led to a new definition of SEAD: “set of activities that neutralize, temporarily degrade, or destroy enemy surface-based air defences by a destructive and/or disruptive means, and contribute to freedom of manoeuvre for friendly forces in the battle space”.⁸ This new definition deliberately uses terms that allow land, air, maritime and space combat assets, kinetic and non-kinetic, lethal and non-lethal, manned and remotely piloted, to participate to SEAD missions in order to suppress the enemy air defence system through direct / indirect actions against its surface based elements in order to provide the freedom of manoeuvre for friendly forces in all five operational domains (land, air, maritime, space, cyber and electromagnetic). Nonetheless, SEAD missions do not cover the offensive actions against enemy AD fighters as weapon system of the enemy Integrated Air Defence System (IADS). They are limited to complementary electronic attack actions against ground-to-air and air-to-air communication links or against the onboard radars.

In order to achieve the effects stemming from the general objective of SEAD missions, friendly forces have the possibility and flexibility to use, in a proactive manner, any of the following combination of capabilities:

- Anti-radiation weapons (missiles) used in a passive manner (as locating means or deterrent) and an active / kinetic manner to destroy radar stations, jamming sources and directed energy weapons (e.g., High Power Microwave);
- High precision weapons (PGMs guided through GPS, laser and EO/IR/RF) employed in kinetic attacks (hard-kill). They can strike systems that do not emanate electromagnetic energy but need precise location data provided by other support assets (e.g., ISR, AEW, etc.);
- Directed energy weapons that can be employed against the entire set of IADS elements (including personnel) in a lethal or non-lethal manner;
- Electronic attack used to degrade, neutralize and deceive enemy IADS, in a non-lethal manner through direct offensive actions (e.g., blocking enemy’s access to information)

⁸ NATO SEAD Policy, 2014.

and indirect actions (e.g., denying enemy employment of electronic assets). Main methods: radar jamming, communication jamming, simulation of false targets (physically by using chaffs and electronically by using the Digital Radio Frequency Memory technology) and communication spoofing;

- Conventional weapons systems (field artillery, ground-to-ground missiles) employed in kinetic attacks against SEAD targets located within their range. Their advantage consists in the fact that they can be employed for extended periods of time and their degree of vulnerability remains approximately the same for all this time;

- Maritime specialized weapons and onboard conventional weapons (e.g., guns, cruise missiles) which can be employed in kinetic strikes (hard-kill) against SEAD targets located on the sea or on the coastal area through Naval Gunfire Support;

- Special Operations Forces capable to conduct an extended range of actions with SEAD effects. In lethal and non-lethal manner, including direct support for the employment (guidance) of the PGMs;

- IT&C assets that could be used for degrading, neutralising and disrupting the C3 systems of IADSs;

- Information support capabilities (e.g., NATO Network Enabled Capability) that can be employed in order to rapidly and precisely achieve data and information about air defence threats (e.g., multiplatform geo-positioning through Multi-ship Ranging; presence warning and positioning data through Collaborative Electromagnetic Support Measures Operations; Electronic Order of Battle through NATO Common Operational Picture).

The intelligent exploitation of resources in a multidimensional framework in order to maximize the effects is not an attribute of the visionary people anymore, but it is a day-to-day requirement for any military. This approach gives a chance to Romanian military to establish a viable SEAD capability by incorporating the new principles of conducting SEAD in their doctrines and combat manuals. Such a capability is imperatively necessary to any military force and especially to any Air Force in the world, being the only one capable to provide the achievement of the necessary degree of control of the air.

In a realistic approach though, we have to admit that the doctrinal adjustments are implemented with certain latency and the way in which the SEAD missions will be conducted in the future will depend on the commander's intuition, on his ability to understand the operational environment, on his capacity to act in an innovatively manner and the level of risk that he/she is willing to accept. As long as the non-lethal effects can be hard to measure and do not offer many assurances, the commanders will still be tempted to concentrate on the traditional way of conducting SEAD missions where kinetic (hard-kill) actions will prevail.

The validity of these new concepts will be proved in the future operational environment and each of these ideas will be confirmed (or not) by the battle space realities. The general idea is still valid though – SEAD missions are not conducted as fifty years ago and are not constrained anymore to the Wild Weasel and Iron Hand metaphor.

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ECOSOPHY, PHILOSOPHY OF SECURITY, NEW TECHNOLOGIES AND THE DIGITAL PHILOSOPHY

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Abstract: *Defining Ecosophy (ecological wisdom) like a contemporary philosophy of survival, security and a sustainable Human Development, terrestrial nature and society, the author of this article approaches the correlation between Ecosophy and the Security's philosophy and also the correlation between it and the digital version of security in the context of new technologies.*

Human survival is in connection with the protection, optimal functioning of the natural environment and the development of human society. Human evolution, physical and psychological (the issues of Anthropoecology, a medical-biological science, deals with them), depends on the natural and social environment, on the development of new techniques and technologies.

New technologies (nano-, bio-, info-, socio-technologies) can ensure the security and the increasing development of the human being, but they can threaten it too.

The author does not deny behaviours, the possibility that human intellect could be non-biological. Moreover, the author believes if it comes to it, that we will not be able to speak about the human species. New technologies like the traditional and less new, are intended to help in solving various problems related to health, society interactions with nature, human society and diverse cultures, societies and states.

The philosophy of security and the digital one, like the components of Ecosophy, along with philosophical aspects of Anthropoecology, General Ecology and Social Ecology, needs like any other science or philosophy to elaborate systems of concepts, principles and laws.

Keywords: *Ecosophy; Philosophy: new technologies; Anthropoecology; society.*

Introduction

The contemporary times demonstrates that history's rhythms accelerate sharply. All the science, technology, culture, socio-political life's changes prove this assertion.

Hegel, a German philosopher, said that the philosophy from its inception could be characterized as "the era covered in thought" and as "the quintessential era". In other words, the philosophy has always reflected social life, humans and their main problems. Even contemporary philosophy can't be an exception. Traditional philosophy has often been criticized, accused that it's far away from life that is no longer necessary for today's human being. However, it always revives and demonstrates its necessity. Science, which was often matched by philosophy, needs this renewal, reform. The integration processes that take place in modern science and its achievements consequences for humans need meditations, philosophical generalizations and predictions.

The ecosophy or the ecological wisdom, as I see it, is the new philosophy of our times and of the future. We defined current philosophy is that global issues, security and human survival, human society and nature land. The ecosophy, which is a proper philosophy of our times, cannot evade the resolution of global issues, the security mentioned above. New technologies, such as Nano-, Bio-, Info-, Cognitio-, Socio- technologies (NBICS), which are converged, may contribute to the development of human society, but also can represent a risk for the future of human being. They confirm the need of ecosophy, analyzing all the problems and ways to solve them through the prism of green social, antropoecological and general ecological, but the main, through the man.

The security is necessary to human beings, society and nature. These emphasize the need of security philosophy. Convergent application of new technologies to solve problems of

contemporary society and civilization, can't take place without applying computer and robot techniques. These emphasize the digital philosophy's need. Both of these new philosophies, the security philosophy and the digital one are components of ecosophy, which, in this case, is presented as metaphilosophy, that are different from singular and particular philosophy.

The main problem of this article is to demonstrate the need for human practice and science of ecosophy with those two new components - philosophy and philosophy of digital security.

Materials and Methods

The imperative problems of contemporaneity; the new converging technologies; the discussions about the needs on reform philosophy; correlation with the latest science – these are the materials on which the author relied.

The methods that were used: historical and logical methods, comparative analysis, extrapolation, analysis and synthesis dialectic.

Results and discussions

Ecosophy and its components. The ecosophy or ecological wisdom is the philosophy of contemporary global issues, of survival, of security and of sustainable development of human society and environment. It combines in itself the philosophical problems of general ecology, ecological anthropology or human ecology and social ecology [1].

The ecological anthropology is primordially in this triad, which includes its philosophical aspect. However, the fundamental problem of philosophy is human beings' problem. The environment could be completely different from that we have today. Could it be better or worse? Who would have been the person that could appreciate it if there were nonhumans? The human is the most important "destructive" factor of environment. Simultaneously the same humanism is the most important master painter of it. If he understood his activities, he could restore what he has destroyed. If he destroys, he improves it at the same time. The second nature, which is cultivated by human being, has many good aspects that surpass the first. The apple from the tree is more preferable than that one that grows up in the forest. The horse from the circus and the horse from the sports stadium are much more elegant, more beautiful than the wild one. The same thing can be said about most human creations. The human being has created civilization and culture. The nature could know itself and could improve itself thanks to the efforts by human. He created the society too, without which he cannot appear or exist as human. Society is not a sum of individuals, but the result of their interaction. It can't exist without individuals as it can't exist outside of it and without nature. Moreover, the nature, which was modified by humans and human society, can't exist like we can see it today without humans and society. The man is that one who can combine harmoniously the environment and the society. The ancients called the nature cosmos (the organized universe different from chaos that is an unorganized universe) and they called the human a microcosm. The man is a natural being and a biological organism (by his corporeality) on the one hand, and a created being, a social one, an "artificial" (by conscience, reason, creativity) on the other hand. The man can be divided theoretically into socio-natural or bio- psycho-social being. In practice, the social, the psychological and the nature or biology are interlocked to form a harmonious whole. The biological body of human cardinally differs from other natural biological bodies. The conscience, the reason can appear only in the human body. The baby isn't born like a human; it is only a potential human. The culture, the society and the communication transform child into a human. The society and the culture

can't turn any natural species into a human. The monkey, which has more in common with the human being, may learn the deaf-mute alphabet, but never will it be rational.

Philosophy security

Man and society are creators of values. Some become general human beings others remain national, change or disappear. All values presented by it contribute to upward development, progressive human species. One must respect human individual, to develop and protect them. This however is not easy.

According to statistics, 1 billion people in the world suffer from hunger, 8 million die annually from hunger and malnutrition, 22 thousand children aged up to 5 years die every day because of poverty [2, p. 379]. The richest 10% of the population gets more than half the world's annual profit. Profit 1% of the wealthiest part of the population is equal to the income that it receives the poorest 60%, ie 4.3 billion people. As expressed Piter Hershock "a discrepancy between economics and ethics" [3, p. 520]. This discrepancy, says M. G. Stepaneant, "nefarious was manifested on the development foolish, greedy natural environment [4, p. 45]. H. Hurd wonders why people destroy their own nest and responds, "Because we have an incapable economy and powerless ethics" [5, p. 82].

Economics and ethics were not always different areas. Let us remember the words of Aristotle, the ethics and the economy is in practical philosophy, unlike the first philosophy (metaphysics). There are, according to M.T. Stepaneant [4, p. 46], not a few examples of close ties in various cultures since antiquity and at least until the eighteenth century. Nowadays model is based on attachment vicious to the ideal individualist and Enlightenment "man - the king of nature." The task is to restore harmonious relations between man and nature and with other community members.

The important thing is that such criticism comes both from representatives of non-Western cultures, and from the Westerners. One example is critical given economy and western ethics by American J. McRae, a specialist in Japanese ethics, with frequent references to philosophical Watsuji Tetsuro Japanese representative Khioto known schools [6].

Watsuji Tetsuro individualization rejects Western ideas of ethical and metaphysical dualism. The body and mind are absolutely indivisible for him, and "Human relations is beyond the personal sphere [6, p. 68]. J. McRae concludes that the interpretation of ethics by Japanese philosopher human relationships with the natural and social environment that gives regulatory limit, which can contribute to stability and peace. If ethics serve to maintain stable economy and security, it should contain principles that require mandatory compliance. "All people are the owners of shares of continuing natural environment, socio-economic stability and international security. Non-moral is getting rich at the expense of others or the natural environment, the natural resources on which we are all addicts. Poor countries suffer more from the negative impact on natural menu from unchecked population growth, unstable consumerism and technologies. This means that these countries are subject to risks greater influence social consequences that lead to conflicts that threaten the security and stability of all nations. For those of every nation's interest have to maintain economic stability and environment of other countries [6, p. 79]. Good and necessary elements for a global ethic are all mentioned above by various ethicists and economists worldwide.

I believe that the foundations of human nature and society must hang a new ethic. This ethics, in my view, is the global ecological ethics, humanism based on traditional ecological and ethnic. And propagate this fundamental ethical my publications since late last century to date [1, 7].

New ethics being a part of ecosophy not limited to issues of ecology but they include those of social ecology and ecological anthropology. So it makes no security exception. Who

and what should be protected? It's not easy at all to answer this question. Russian actions in Georgia, Transnistria, Ukraine, and Syria are masked by the so-called Russian leadership to maintain its own security and governments 'legitimate' etc. Security should be based on general moral values which I mentioned above.

Security relates to almost all material and spiritual entities. My previous publications address issues reaching safety substantiation security concept as a concept and even philosophical category [8]. It is required at present to substantiate a philosophy of security, as part of ecosophy. Once security covers all areas of reality and nature, man, society, psychic consciousness, the virtual world - we have every right to speak about its philosophy.

Application deadline questionable security also is an argument for security philosophy. The main argument is that security concerns human being. It shall submit other security including itself.

Global issues, including climate change, new technologies threaten human security converge. But all this can't be put at the service of human security outside digital technologies or information.

Digital philosophy

Formed in the 40s of last century, the computer has created a new reality, a new culture - the virtual one. Since the 70s began to build the Internet. This virtual globalized world, becoming a reality, that philosophy should consider.

Does "philosophy should like to enter into the digital age" asks Lavinia Marin article "Outline for a possible philosophy of the digital". I think so, or philosophy as already mentioned, is "the era covered in Thought", "quintessence era". Although almost 2 decades we entered the digital age, philosophy not yet felt the shock of change [9, p. 571].

I am convinced that many of the general problems of digital technologies are philosophical (i.e., passing through the human world issues). That will give them the human species, stagnation or regress progress? Robots compose music, literature, make translations from one language to another etc. Can they ever think philosophical really? It all depends on their programming by humans. Knowing what kind of belletristic music do robots, how they administer translations, you figure out what kind of good will practice its philosophy. Mechanization true philosophy can't be, or it is creative. No program of the best pogrom, is he even a philosopher, will not make the robot to philosophize. The program cans only formal aspect of thinking, those based on algorithm. Deep thinking can't be formalized scheduled.

L. Marin raises the question of bringing philosophy into line with the new reality in which the man found himself. Relying on his views Vilem Flusser, "one of the most important philosophers of the last century media" [9, p. 572] it reach certain conclusions. "Without realizing it, we are in full crisis for years text". Behind it "stands a greater crisis of thought initiated by texts' so-called" linear thinking ". Crisis thought textual, and therefore the "linear thinking" was described in detail by Viliam Fluser almost 30 years. In his book entitled "About writing. Writing has a future?" V. Fluser started from the idea that the act of writing and thinking related to living their last days because computers appearance. As we know these are based on numbers and not text.

V. Fluser believes that the history of human thought can be divided into 3 stages. The basis of this division is the codes used by man to represent world aces.

The images on cave walls show the world by first coding primitive age man. A coding according to this philosopher is to translate the symbols something that can be interpreted by others. Animal picture painted for the first time, served for hunting from the same community as a means to refer to the real animal. Or, then again there is no common language, articulated in words. Continuing as Wittgenstein's idea that there is no private language, says L. Marin, V. Fluser tells us that there is a privacy code. Everything is coded must be shared by others [9, p. 572].

For V. Fluser according L. Marin, there is no form of thinking that is not associated with an ID. The codes give shape our thinking and conceptual limits of our world. Thus, the form of thought associated with the first code of images was imagination. To imagine is to build images of the world. But the images that mediation of reality, were poorly significant meaning because the image is vague.

Imagine has reached the limits of representational when people felt the need for a new thinking and so a new code to represent and media world. This was invented precisely alphabetic code words to denote external objects. Alphabetic code and writing linear stresses L. Marin, made possible the invention of causal-linear thinking, thinking that we are still caught and now [9, p. 173].

Everything that can be aligned in a row is "linear". From two-dimensional image - this can be contemplated from any point to writing straight past the imposing particular order of reading. This perspective was transferred orderly world, so people began to read the world as a text, supposed to have begun and ended. Then they started to design the world causes, effects, and other linear explanations. Once the world was codified by texts, says L. Marin, the most important features of the text - the order and linearity - were transferred to the world. Even in philosophy we believe we have fully explained a phenomenon when we can reveal his basic structure [9, p. 93].

The man is a rational being and therefore sees everywhere rationality, order. If we deny the world order, we come to the denial of its laws, so and science. The order of world orders our reason and not vice versa as it does L. Marin and authors cite it.

After the emergence of the computer, the Internet and digital technologies in the world order it will disappear? No, of course! The drawings have vanished after the emergence of writing, but have been improved, leading to the peak artistry in painting, architecture, sculpture, etc. Something similar will happen with linear writing and tidy.

As the images were criticized by writing among wrote today it came to be criticized by numbers. The numbers were invented letters with the same gesture of writing, but they express a completely different way of thinking. It is the numerical thinking [9, p. 574].

With the information revolution L. Marin states we have witnessed a new change of code: the alphabetical and mathematical was switched to digital or binary code - two numbers, zero and one, with ambitions to replace all the present and past information architecture. If texts analyzing and criticizing the images, then digital programs constitute a direct criticism of texts. With each change of code we find ourselves alienated from reality [9, p. 575].

The question is a philosophy of the digital possible my answer is yes. The digital philosophy can exist as a component of ecosophy.

Digital technologies influence our positive and negative, both at the level of body and psyche. In recent decades, says C. Voinea, large areas of political, economic and social expanded online. The Internet has radically changed the political behaviour of individuals,

either by offering new ways of obtaining, verification, information dissemination, either through facilitating communication on a global scale. Another dimension of the internet is affected by the logic of collective action, new environment facilitating mass mobilization by offering new possibilities for coordination and collaboration. Thus it becomes increasingly clear that new technologies are not simply useful mechanisms in specific activities, but true drivers of social change [10, p. 583].

The latest examples of digital influence as the US presidential election influenced by "trolls" Russians; Romania protests organized without organizers, hybrid war in Ukraine.

These are also arguments in favour of creating a philosophy of the digital. The latter can be simultaneously a philosophy of security, or at least to interact with it when ecosophy.

Using digital technologies millions of people can be manipulated and directed, including political, without their conscious will.

Google processes about 40 000 every second searches through its search engine, which also means daily uses about 3 billion coming from more than one billion users. Founder of Google, Eric Schmit said in 2014 that is generated every 2 days more content than was created from the beginning of mankind until today [10, p. 586].

A recent study showed that the algorithm of search engine Google may influence preferences of voters undecided 20%, or even more diverse demographic groups in favour of a particular candidate in the presidential election by displaying on the first page of search results for the term " elections 2016 'pages which favour a particular candidate. Which also proves truly problematic it is that this manipulation is difficult to see [10, p. 587].

Digital technologies and drugs can be helpful but can be evil, even threatening human security.

CONCLUSION

Ecosophy is a new philosophy of humanity which includes the philosophy and philosophy of digital security.

New technologies are altering man and society. What matters is that these changes are primarily beneficial, positive and not evil, negative. Possible is it? It's a philosophical problem.

Through digital technologies including people can be manipulated and politically.

New technologies can lead to security, but also national and global insecurity.

Global problems, the most urgent of them - the protection of human nature, cannot be solved without digital technology and philosophy.

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ROBOTICS AND HUMAN PERSPECTIVE

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Abstract: *The aim of the article is the philosophical appreciation of robotics' role in human evolution, possible transmission of the human intellect to robots on a non-biological basis.*

Robots and robotics have their own history. They arose and developed on some logical basis, according to the evolution of human intellect and knowledge. The 40s are characterized by the creation and human encounter with a new form of culture: computers that can accumulate analyze and plan information.

What would be the role of the robot in human development and its importance in history? Is the human capable to create a counterpart "liberated" from the biological nature, able to create? Could it be called a man? What could be done for the robot to acquire human creative ability, or here was not a case when the robots themselves, outside of the program created by humans, were able to plan their development or evolution.

Since the 70s of last century, the Internet has begun to emerge, a kind of a global brain, which at some stage could probably get a similar to human rationality and may even acquire self-awareness.

Robots, robotics, computers, the Internet are present in enterprises, housing, transport, flying machines, security activities, surgery rooms, executing everything what man "commands". Could the robot overcome the man, who is able to destroy the entire planet? Maybe, but only if it was programmed by an aggressive man capable of this.

Keywords: *robotics, internet; evolution; global brain; computer.*

Introduction

Contemporary human society is being more and more globalized. Economy, politics, science, technology, transport, education etc., are all becoming more globalized. The twentieth century can be characterized as the century where most global problems that threaten the existence of mankind occurred in. One of the most serious problems is the protection of human nature. Unchecked, ineffective development of material and technical bases of current human society could deepen the global ecological crisis, the beginnings of which can already be noticed well today. The new converging technologies (NBIC: Nano-, Bio-, Info-, Cognito- technologies) used apart from social and human sciences or apart from social technologies of humanism can lead to human extinction as we know them today.

Most global problems, if they will not be solved be on time, will have a deadly grand finale to humans and terrestrial life. Development of human civilization by inertia, in the absence of strategies for solving global problems and protecting intellectual wearer's biological and human rationality, can have tragic consequences. As the Russian researcher, Hrusinsky notes: "organisms, besides the instincts and emotions possess wonderful mechanisms that are self-serving various forms of learning and help to accommodate to different environmental conditions of living" [1, p. 28].

Living environment on Earth, theoretically and may be practically, could someday become incompatible with life, deadly to man's biological organism. What would be the solution?

In my opinion robots, robotics in general, should not lead to human extinction and terrestrial life. On the contrary, it should contribute to their thriving. Humankind does not need to replace life with death, humans with robots.

I, like many others, consider that the solution lies in the development of science, technology and human morality based on humanism, including ecological humanism and the humanism ethnic [2-3]. It is unfortunate that there isn't a common, unique view regarding the

perspectives of further development. There are even opinions that blame science and technology, new technologies in the development of global issues, in environmental degradation, being considered threatening to life and humankind.

What would the paths of upward development of human society and nature be? Is it possible to give a computer, a robot, typical machine rationality, human intellect? Can the robots at a certain point in the future get out of human control and enslave him or even to destroy him? Until recently, philosophers vehemently denied these opportunities. Today there are many of those who recognize these opportunities. Some even suggest that the fundamental functions related to human protection, defence to not be transmitted to computers, robots, just in case anything might go wrong. I will argue about this problem below.

Discussions about development ways; about the correlation human - robot; about the possibility of human intellect on a non-biological support; the new convergent technologies; the role of robots, computers, Internet in human development; the pros and cons of globalization – these are the topics that I addressed first.

Robotics includes the robots but also those techniques without which they could not exist

Does humankind have a future and what would be the paths of its evolution and development - these are, in my opinion, the key aspects of the term of human perspective. According to the representatives of Trans-humanism [4-7] by the year 2045, our consumer civilization will reach the phase of "multi-ramification", of a "dynamic chaos", approaching the border of "singularity", followed by degradation and death, or switch to a qualitatively new stage of development. The possibility of survival of Earth civilization, moving to a new stage of development depends on the processes of humanity's technological evolution. The last one is present right now and is unfolding in an accelerated tempo, which cannot be stopped [8, p. 215].

Trans-humanism, according to Russian philosopher P. D. Tischenko, express the tendency of melding the human with a machine - "The man will acquire an immortal body of the machine and the machine will acquire his rational soul (already radically machinated) [9, p. 182]. The strategic and social movement "Russia 2045", according to Tischenko appears as native version of the trans-humanist project. 100 years ago, the Bolsheviks wanted to undergo the history development under rational control according the utopian ideas of K. Marx. They essentially were the first practical trans-humanists. Just like the Bolsheviks, today's trans-humanists revolutionaries want to submit the human evolution to the rational control [9, p. 182]. Is it even possible? Time will tell.

Trans-humanism is understood by me as something that surpasses humanism. In the robotized world, the world of robots and robotics where human intellect, according to trans-humanists, is transmitted to machines, there isn't a need for morality and humanism anymore. The last disappears with the disappearance of humans, ethnicities and live nature.

Trans-humanism exists today in social movements, organizations and even in a political party (Russian Federation). According to D. I. Dubrovin, social movement "Russia 2045" was created from 2011 by the businessman D. Itzcov with the support of a group of scientists and culture people. Now it counts for over 30 thousand followers. Many representatives of science and philosophy in Russia and other countries actively support it. Among them is the patriarch of cybernetics, founder of the Laboratory of artificial intelligence at the Institute of Technology Massachusetts Marvin Minski, the Google's ethnic director – Ray Curtwell, the pioneer in the field of prosthetics brain Teodor Bergher, Rodger Penrouz and Stuart Hameroff, George Cerci, Hirosue Isiguro and others [8, p. 216].

Trans-humanism, which claims to transform from an intellectual direction in a socio-political movement, according to the researcher E. V. Mareeva, positions itself as an exit from the anthropological crisis that humanity profoundly feels. Main milestones of trans-humanism according to E.V. Mareeva will be the now presented. Founding of the Cultural Centre World Trans-humanism by the Director of the Future of Humanity Oxford NickBastrom with David Pierce, World Association of trans-humanists, the strategic and social Movement "Russia 2045", and finally founding of the political party of trans-humanist "Evolution 2045" in Russia are the testimonies of the influence or at least of the popularity of these ideas [10, p. 171-172].

Trans-humanists believe that our organic body has reached its capabilities. Trans-humanism opponents believe that the sources of the problem must be sought not in physiology but in society. Our body breaches by the trans-humanists, believes V. A. Cutyriov, is caused by the demands of society, overconsumption, which needs universal and virtually immortal consumers. This means that the ethnic progress does not favour humans, but the objectives of the production process [11, p. 19-21].

The aspiration for deliverance from mortal body for perfection, as being seen by E.V. Mareeva, is not new to mankind. The striving to overcome weak body shell was containing various interpretations. The crisis of classical culture gave birth to the ideas of Nietzsche, where the physicality superior "superhuman" destroys the weak "last human". What catastrophic results were brought by the pursuit of perfection of the Nazis is also well known.

On such a background, notes E. Mareeva inclination towards demonizing trans-humanism is just as unproductive, as the trend of disposal of current human body because of the clear priorities of the possible inorganic body of post human. Essentially it is about potential possibilities of science and technology, which trans-humanists rely on. The important thing is to get rid of the NBICS technologies and trans-humanism as an ideology that from of exalts these achievements. These technologies are self-direction and even supra sectorial international, which like never before, expresses the unity of scientific and ethnic progress. NBICS – technologies are nano-, bio-, info technologies, the achievements in the field of artificial intelligence and robotics, which outlook are not clear in the present. There are no clear features of the future society, which from the beginning was marked by the amorphous term "the post-industrial society" that was no longer relying on the industrial machines. Then came the term "informational society", which was more concise, but as the term "society of knowledge", it is still not fully clear how will the IBICS - technologies change our lives eventually.

Trans-humanism, in turn, is a forecast of the development of NBICS technologies in a current undetermined situation, which like all long-term forecasts, involves elements of good intentions, dreams and myths. However, turning into a political force, such an ideology can of course play a role in the development of the very NBICS-technologies and in the usage of their results [10, p. 172].

Robots and their positive and negative role in society

An important question arises: can a man actively using new converging technologies create its own counterpart, gotten rid of the biological nature and simultaneously possess creative abilities? In such a case, we can speak of an entity that is not a human anymore, but it is by itself a product of creative activity and improperly biological evolution. Such a product of man's creative activity is presented as a robot. The latter can be a product created by the creative activity of a man but not be man. It is important to clarify which necessity determined humans to create a robot. [12, p. 74-75]. The robot appeared not by chance, but as a product of a particular historical necessity. This fact is brought to our attention by the American economics futurologist John Nesbit [13]. John Nesbit highlights the specific role of robots in

economic development. In Japan, according to Nesbit, "robots built robots". At the Yamasuki company which specializes in mechanical instruments, only robots work on nightshift, being under the control of a single worker. Despite the opposition from some workers, robots have become necessary to solve the problem of creative activity in our industrial society. The robot is required to fulfil human activities, which are done not only for working machine which repeats his actions, but also the interaction with the environment and depending on the choice which needed to meet the new shares. In critical circumstances, the robot stops its actions [13, p. 111].

Robots in the opinion T. V. Cuznetzova and Ogurtzov, allowed the man to move from the industrial to the informational economy, and most importantly - to transform the collective creativity into an individual one. In addition, it is not the human who chooses the required type of activity for a given situation, but the robot himself. The human only plans the types of actions for a specified term, and during this term the robot changes the type of action in line with the changing situation and according to information [12, p. 75]. The information, according to Nesbit in 2003, will become a new economic margin, and at least at this moment in time, the US is the world's leading provider of information [13, p. 112].

Does the robot have the choosing freedom similarly to humans? The human puts a multitude of actions in the robot's program of activities. This program interacts with a situation created by the robot, functioning according to the program by acquiring a certain freedom of action, but unlike humans, the robot is doomed in advance to solve the problem, which he will run. The boundaries and goals of his activity are determined by the very human. The robot is created by man to take away the need to attract an enormous amount of workers fulfilling work, to which each worker is able [12, p. 75].

Could the robot achieve an independent existence in the future? As we know, today's robots can create other new robots. As I mentioned before, the robots can independently work instead of teams of workers for a prolonged time, but being under the control of a single worker. However, there was not any case when robots would plan their own development passing by the activity program developed by the human. If the robot would create something, it would not be the result of its creative activity, its ingenuity. "The creation of its own" is only possible if, when man will put him to the robot already created logic of service, struggle poetic etc. As of today, no one can say how the robot could acquire human creative activity [12, p. 77].

Regarding the robots, we can speak of two main directions. The first is the tendency to create robots that are be very similar to humans. These robots could at some point replace man giving that they are more perfect and more independent from terrestrial life conditions which are degrading. Robots could be possessors of the human intellect on a non-biological base. This is the direction of trans-humanism that I consider utopian and unnecessary. The second direction consists in the "repair" of the human biological organism, fortifying him unnaturally, artificially. We could say that this is "the cyborg way".

A cyborg is not robot, says E. Mareeva because he obtained his personality as a man, and the problem is when and where he can lose it. Robotics has another task - how could it obtain artificial conscience, independence and human-like qualities. Can appear the soul into this by programming rather than by how it occurs to humans, through education, learning, objective communication?

The progress in the "repair" of the human body is a reality, and this progress will continue in spite of any protests. Doubtful is also the moratorium on robotics development. People have replaced their physical efforts with machines, and then they passed with such systems functions by workers. Now on the agenda of cooperation in creating new machines, i.e. creation: is enslavement of man by a "smart" machine possible?

War and enslavement of people by robots in the future is of course a myth, but the possibility of human enslavement by other humans with the help of robotics is not. It would be regrettable if these wonderful human tools will be transformed into weapons. Then, mention E. Mareeva, future wars will not be between soulless Androids but between soulless people [10, p. 173, 176].

CONCLUSIONS

Humanity, man's body and psyche will have a future if their actions will be based on traditional, ethnic and ecological humanism.

Robots, robotics are wonderful human tools, but they cannot replace him. Otherwise, the human would not be human but something else.

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WAYS THE ROMANIAN ARMED FORCES CAN EXPLOIT THE LESSONS LEARNED FROM THE 21ST CENTURY HYBRID WARS

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Abstract: *The dynamics of modern warfare presume a large amount of dates to be analyzed and processed to define and create the complex learned lessons domain. The war experience became a valuable instrument in military training process and represents an answer to the newest challenges of the hybrid warfare. Redefining the military theory and the military actions development became a consequence of the hybrid tactics and methods discovered in the modern battlefields. The permanent evolution of the geopolitical situation and under the spectre of a modern hybrid enemy, the Romanian Army generate new strategies to understand, control and combat all type of hybrid aggressions.*

Keywords: *hybrid war, hybrid threats, lessons learned, challenges, strategic actions.*

Introduction

The major international changes and the dynamic global geopolitical situation led, in a short time, to the appearance of a new, transnational, hybrid actor who generated, through his actions, the necessity for a different approach to modern conflicts. The hybrid methods and tactics do not necessarily constitute an element of novelty, since they have been used often in the history of the military conflicts, but the nowadays exponential technological development, communication systems, the unprecedented opening and opportunities presented by the free movement of people and goods, the access to information and the free market have open ample opportunities for hybrid actors.

Modern conflicts have demonstrated the efficiency and effectiveness of the hybrid methods, the constant presence of hybrid actors, as well as their high level of versatility, dynamism and innovation. The hybrid nature of a military conflict is defined by the entire spectrum of activities, methods and techniques employed by an enemy (be it a state, an organization, a group, a movement, etc.), in addition or instead of the conventional fighting methods, in order to counter the actions of an opponent (state, coalition, organization), superior in terms military force, economic, demographic and, technological superiority, disproportionately applied.

Consequences of Romanian's geopolitical position. Adaptation and survival

In the current geopolitical context, Romania is a buffer state between two poles of geopolitical pressure – the West (represented by the US and its allies) and the East (represented by the Russian Federation, China, Iran and their satellite states). The situation in the ponto-balkan isthmus, where Romania is placed alongside with other twelve nations (Finnish, Estonian, Lithuanian, Latvian, Polish, Czech, Slovak, Hungarian, Bulgarian, Serbian, Croatian and Greek), is a "shock absorber" of possible shocks caused by geopolitical centres located in the East and West.

Recent changes in Turkey's foreign policy have determined NATO to redefine its geostrategic systems in the region by strengthening the Alliance eastern flanks. Thus, Romania became an important strategic partner of NATO, assuming the role of centre of

gravity for the Southern flank of the Alliance, alongside Greece, but with the strategic advantage of the Black Sea access. Due to its geographical position, combined with its demographic, economic and military potential, Romania places itself within the NATO major members' category, while the access to the Black Sea, transformed, de facto, into a "Russian lake", leads to a reconfiguration of the Western political and military projections in the region.

Furthermore, the political situation in Ukraine, marked by the existence of a separatist-type conflict in the pro-Russian regions of Donetsk and Luhansk, requires an in-depth analysis and understanding of the hybrid conflict phenomenon, the setting of the theoretical foundation of future projections and courses of action, depending on the further development of the conflict.

From Romania's perspective, the membership of a large military alliance and the special relationship with the US provides a high level of politico-military security and stability. Romania became member of strategic-importance within NATO, not only in terms of geographical importance and stable political and socio-economic situation, but also in terms of a modern, military organization capable of performing a large array of missions alongside their allies. As the fourth troops contributing nation¹ in the Afghanistan Theatre of operations, Romania has displayed availability and capability to sustain a high-standards military presence outside its borders, alongside its alliance partners.

The presence of Romanian military contingents in international missions, since 1991, conducted on three continents - Europe (Albania, Bosnia-Herzegovina and Kosovo)², Africa (Angola and Somalia)³ and Middle East (Iraq and Afghanistan)⁴ provides a consistent heritage of lessons learned and experience gains, which bring an essential contribution to the modern Romanian military system build-up and strengthens the entire Euro-Atlantic assembly.

Romania's military commitment in many major conflict zones worldwide requires a substantial effort in terms of personnel, equipment and financial resources, considering the rather scarce availability of the above resources at its disposal. Transforming Romania's old national defence strategy concept to protecting and promoting national interests within NATO, way-beyond its national borders, requires assumptions regarding the international missions intricateness, a modern, mission-tailored projection system of future military actions and the implementation of a set of lessons learned to substantiate response strategies to hybrid threats.

The implementation of the lessons learned from the 21st century hybrid wars by Romanian army

Identification, analysis, implementation and subsequent monitoring of the lessons learned effects by the Romanian Armed Forces is a normal, continuous process, which involves adapting permanently to hybrid threats in the theatres of operations. Thus, Romanian soldiers have learned lessons from their experiences, and the experiences of the coalition partners, and tried to adapt their response strategies to the nature of the threats.

Romania's presence in international theatres of operations also involved the necessity for Romanian military staff to work in multinational headquarters.⁵ Thus, one of the main lessons learned - which was also implemented - was raising the professional level of the

¹ *Actuality file - NATO Summit Warsaw*, 8-9 July 2016, <https://www.mae.ro/node/36635>, accessed on 11.02.2017.

² Visarion Neagoe, *Romanian Army in international missions 1991-2009*, Army Technical Editorial Center, Bucharest, 2010, pp. 56-74.

³ Nicolae-Ionel Ciucă, *The participation of the Land Forces Forțelor in international missions*, in Romanian Military Archives Bulletin – Documents, Bucharest, no. 64/2014, pp.1-2.

⁴ Visarion Neagoe, *op.cit.*, pp. 79-216.

⁵ Visarion Neagoe, *op.cit.*, pp. 246-250.

Romanian military staff deployed in international headquarters, by providing English language training, familiarization with NATO procedures, adapting the way military actions were conducted to the requirements of the joint environment. In this context, achieving the necessary goals during the pre-mission training in order to enable an easy integration and the acquiring of professional skills necessary for carrying out activities with alliance partners, has become a sine-qua-non condition.

The large and permanently-evolving array of IED attacks required a continuous adjustment to the tactics and methods of countering such attacks, used by the Romanian soldiers. The augmentation of the ballistic protection level of the combat vehicles was the main method of countering IED threat; in this respect, Romanian troops were provided with augmented IED-protection equipment at the same pace as their allies. During the conflict in Iraq, Romanian troops have been equipped with HMMWVs (High Mobility Multipurpose Wheeled Vehicle), with a level of ballistic protection matching the level of the threat, while in the Afghanistan Theatre of operations, where the IED threat level was much higher, a new type of vehicle is used - MRAP (Mine Resistant Ambush Protected), with a higher level of IED protection. Equipping the combat vehicles with ECM (Electronic Counter Measures)⁶ devices to jam the radio triggered IEDs' signal and with Mine Roller⁷ devices to trigger mines and pressure-plate IEDs was a result of the lessons learned and led to a significant decrease of the number of victims and ensured a high degree of protection for the troops. Also, the tactics and methods of dealing with IEDs have changed as a result of lessons learned, in terms of adopting a different approach of the risk situations by the Romanian soldiers. Learning from their previous IEDs encounters, when the insurgents placed IEDs in crossing/choke points (bridges, valleys, ravines, gorges), the troops applied the lessons learned and began to send reconnaissance teams (usually two-men strong) to search the risk zones, and increase the counter ambush measures (as insurgents often used the combination of the effects of an IED struck followed by an ambush).

The constant use of hybrid combat tactics/methods by the insurgents in Afghanistan and Iraq prompted a different approach to the rules of access in military bases, a continuous change of night recognition signal in order to avoid fratricide, and the implementation of new procedures and rules of engagement.

Romanian military presence in the Middle East theatres of operations involved coordination and management of geographic areas defined as areas of responsibility, either independently or in cooperation with other coalition forces. Romanian soldiers have quickly learned how to organize and manage forward military bases (FOBs) or PB type base (Patrol Bases) and how to properly conduct operations in the AOR (Area of Reasonability).

Thus, we can state that Romanian forces have implemented and applied in a rapid rhythm a series of lessons learned by the Coalition partners in order to adapt to the conditions of the theatres of operations and to conduct military actions at a high level.

Compatibility issues regarding communication systems occurred during first international missions and were solved by purchasing and implementing communication systems compatible with the ones used by NATO, thus allowing a better coordination and interoperability.

In this context, the Romanian Army logistics compatibility with the coalition partners represented an important goal, which was dimensioned and perfected by the learned lessons. Introduction of the Romanian National Support Element in Afghanistan as an interface with

⁶ Ștefan Grosu, *Modern systems in electronic warfare*, în Buletinul Forțelor Navale, Romanian Hydrographic Printing Direction, Constanta, no. 23/2015, p.10.

⁷ Handbook, *Afghanistan Route Clearance Supplement. Tactics, Techniques, and Procedures*, Center for Army Lessons Learned (CALL), Combined Arms Center (CAC), Fort Leavenworth, no. 09-33, May 9, 2009, p. 14.

international logistic structures was a model of appliance of the achieved experience, as a result of identification and implementation of a learned lesson

A lesson learned and applied by the Romanian Armed Forces was tailoring the size and composition of the forces participating in missions abroad, to cover all required levels and branches, such as infantry units/subunits, PsyOps teams, HUMMINT, SIGINT, HQ staff, MPs, logistics and medical formations. The continuous presence of the Romanian Armed Forces in the conflict areas led to the accumulation of a rich experience, and generated lessons learned which were applied in a unitary concept that ultimately led to a unique design.

The importance of the Romanian CIMIC teams who carried out missions in the theatres of operations, especially in Afghanistan, demonstrated a deep understanding and dissemination of hybrid war mechanisms and also demonstrated the capability of implementing valuable lessons learned⁸ which are meant to counterbalance the effects of the hybrid war methods used by insurgents. The Romanian military involvement in PRT (Provincial Reconstruction Team)⁹ related actions through which infrastructure projects were developed for the benefit of the Afghan population (construction of schools, kindergartens, medical centres, wells, canals, etc.) has determined a changed in the perception of the population towards the coalition forces and also led to a decrease of the insurgency in the PRT teams AOR.

Framework CIMIC activities, which included maintaining permanent contacts with relevant community members in the area of responsibility and permanent support for the civilian population through basic necessities provision, medical care and managing civilian affairs was the result of previous lessons learned and influenced the post-conflict phase management strategies.

Establish a new media strategy to change the civil afghan population perception toward the Romanian military presence was a great challenge for the military commanders. The specialised structures of PsyOps acting, among CIMIC teams, to approach the civil population and these generate surprising effects, by promoting some adequate persuasive themes and lines. One of the main goals achieved, in some particular areas was convincing the civil afghan population to support the political and administrative afghan structures and to respect the national and international laws.

Generating a theoretical and practical framework of the national training period, represented an opportunity to apply and implement the whole set of learned lessons gained from the experiences of military contingents and also, a permanent adaptation and upgrade related to specific requests of the theatre of operation. Developing the training in the condition of the conflict, focusing on the IED response and reaction in ambush, gave to Romanian soldiers the advantage of an efficient and realistic training.

CONCLUSIONS

At national level, hybrid conflicts generated the remodelling of the Romanian military thinking by increasing the flexibility of the missions and their continuous adaptation to a series of internal and external constraints, expressed through a series of social, political, economic and military factors, interacting and interconnecting.

The hybrid nature of conflicts in modern times has increased the importance of the lessons learned portfolio and the need for careful consideration of the forms and methods of

⁸ Teodor Frunzeti, colectiv, *Learned lessons in international missions*, Army Technical Editorial Center, Bucharest, 2005, pp. 123-152.

⁹ Robert Perito, Ed., *Provincial Reconstruction Teams: Lessons and Recommendations*, Woodrow Wilson School Of Public And International Affairs, Princeton University, USA, January 2008, pp.6-7.

hybrid warfare, in order to generate response strategies and to substantiate predictions and future scenarios.

The Romanian military presence in international theatres of operations in conflict areas alongside NATO partners presents an advantage in identifying the modern battlefield challenges, both conventional and unconventional, through the accumulation of experiences that will be translated into lessons learned.

The correct and timely identification of the lessons learned, correlated with their analysis and dissemination, leads to corrections and improvements of the way we conduct military operations in the theatres of operations, increases readiness for new/current domestic challenges, reduces the element of surprise and increases the level of safety/protection of own forces.

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THE CONTRIBUTION OF THE INTERNATIONAL AUDITING STANDARDS AND THE PRACTICAL WAYS OF IMPLEMENTING THEM AT NATIONAL LEVEL

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Abstract: *The objective is to create a standard model of managerial control, to be uniformly and consistently applied in all fields. These standards serve as a reference system for the management of public institutions which must implement internal control systems and specialized structures that evaluate these systems. Seen in the light of the general principles of good practice internationally and EU accepted, internal control policies and procedures are all designed and implemented by the management and staff authority to provide reasonable assurance for: objectives of the public entity in an economic, efficient and effective way; external compliance, policies and management rules; protection of assets and information; prevention and detection of fraud and errors; quality accounting documents and timely production of reliable information on the financial and management segment.*

Keywords: *internal audit, public entity, internal/managerial control, auditing standards, consulting, risk management.*

Internal audit is an activity that is carried out based on standards. Irrespective of the particular conditions in which the activities of audit take place, it is necessary to follow certain basic principles contained in the standards for fulfilling the responsibilities of internal auditors.

The standardization body for the internal audit profession is the Global Institute of Internal Auditors (IIA). Considering these aspects, international standards have been developed for the Professional Practice of Internal Auditing. Internal auditors are recommended regardless of the environment in which they operate and on which they need to achieve their standards for conducting internal audit view particularities entities they audit. In this regard, the IIA General Professional Practices Framework (IPPF)¹ was developed.

It includes IIA authorized rules, which are organized to facilitate the development, interpretation and consistent application of concepts, methodologies and techniques in the field of internal audit. The IIA approved rules include two categories:

- necessary which should ensure compliance with the principles set out therein. Mandatory rules include: definition of internal audit, Code of Ethics and International Standards for the Professional Practice of Internal Auditing (IIA Standards);
- recommended with confidence, that is recommended to ensure compliance.

These rules describe the best practices for the implementation of the definition of internal audit, Code of Ethics and International Standards for the Professional Practice of Internal Auditing. The purpose for which the standards were designed is to contribute to: compliance with the basic principles on which internal audit practice to be followed; establishment of the benchmark for development and promotion of internal audit activities designed to bring added value to the audited institution; establishment of criteria for assessing the functioning of internal audit and its performance; determining performance improvement activities carried out by the audited institution. The professional standards of internal audit include several components connected in a logical whole, which defines auditors imposed on all specialists in the field, as follows: attribute standards - 1000 series - called qualification standards; Standards of achievement - 2000 series - called operating standards; Standards of practical application - Series AP 1000 and AP 2000 series standards are implemented in

¹ Adapted from www.theiia.org

specific missions. In actual work, Internal Audit Standards are constantly adapted to improve practice in this area and minimize potential conflicts of interest given that the internal auditor „ *professional competences produce real benefits to the entity, through a systematic evaluation based on auditing standards and best practices, policies, procedures and operations carried out by the entity* ”².

The third element is the mandatory IIA Standards, also known as the "Red Book". According to the Institute of Internal Auditors, the Standard aims are:

- “to outline the basic principles that represent the practice of internal auditing;
- to provide a general framework for developing and supporting a wide range of internal audits that generate added value;
- to operate as a benchmark against which to assess the results of internal audit;
- to stimulate improved processes and operations of the organization.”

In the preamble, the IIA Standards state that they are mandatory requirements based on principles, including:

- „statements about the basic requirements for professional practice of internal auditing and for evaluating the effectiveness of implementation of tasks, applying international organizational and individual level;
- interpretations that clarify terms or concepts from statements”.

Qualification standards set by the characteristics of the individuals involved in performing audit and internal audit activities and shall consist of four main categories of standards (1000, 1100, 1200, 1300) with several standards subsidiary called practical implementation standards.

Performance standards or achievement defines internal audit activities, define quality criteria to measure them and shall consist of seven main standards (2000, 2100, 2200, 2300, 2400, 2500, 2600) and several subsidiaries standards, known as practical implementation standards.

Standards implementation or subsidiary, practical application is the implementation of the standards of qualification and standards of achievement for specific tasks, such as: creating a system audit, conducting a mission to provide advice etc.

Association Board of Internal Auditors of Romania - AAIR is concerned about how the adoption of Internal Audit Standards. There are ways by which it is estimated that should be adopted internal audit standards as national standards of the US or perform a translation approved by the IIA public institutions based on this „*Frame of reference of professional practices*” have begun to perform its regulatory framework consists of: code of ethics, professional standards specific manuals etc., to be taken in the internal audit charter of the institution. Standards must be implemented and enforced as they were set to achieve the expected results.

In Romania there is the AAIR Association of Internal Auditors, which is seeking to join the International Institute of Internal Auditors - IIA US. AAIR

The AAIR Committee founding members have established several objectives that were analyzed at the first general meeting, including the adoption of international standards for internal audit and those of good practice in this area recognized as national standards.

Thus, our country amended and republished Law no. 672/2002 on public internal audit; general rules were developed for the exercise of public internal audit, approved by the Government Decision 1086/2013, which is the legal basis of internal audit, and after that public institutions have developed rules for their own specific internal audit exercise.

² Anghel I., Ișfănescu A. și Robu V. *Business Valuation*, Bucharest: Economic Tribune, 2001, p.17.

On these rules, we can see that the IIA Qualification Standards are similar in HG. no. 1086/2013 as qualification rules, and Performance Standards are treated as operating rules of internal audit.

The table below presents the main similarities and differences between rules applicable to internal auditors from the Government. no. 1086/2013 and IIA Standards are:

The rules applicable to internal auditors in HG. no. 1086/2013	IIA standards
<ul style="list-style-type: none"> • Rules Qualifying - Internal Audit Charter and Code of Ethics of Internal Auditor; - Independence and objectivity; - Competence and professional awareness; - The quality assurance and improvement. Rules of the internal audit function: - Requirements for the functioning of the internal audit department; - Objectives related to internal audit activities. Preparing internal audit mission Intervention on site Internal Audit Report Follow recommendations Supervise internal audit mission. 	<ul style="list-style-type: none"> • Qualification Standards: - Purpose, authority and responsibilities; - Independence and objectivity; - Competence and professional care; - The quality assurance and improvement. • Performance Standards - Management of internal audit; - Type of business; - Planning missions; - Making Mission; - Communication of results; - Monitoring its progress; - Resolution on risk acceptance by senior management.

Table 1 - Comparison of rules applicable to internal auditors in HG. no. 1086/2013 and IIA Standards.

The comparison made clear the similarity between the rules applicable to public sector internal auditors and IIA standards, the latter serving as a prerequisite for developing such rules.

These shall be treated by a specially chartered accountant, the independent external auditor or the auditor. The implementation of responsibility standards in practice can be appreciated with the Auditing compliance and hence the quality of the audits performed because „If in 1974, when the first international standard risk was that the internal auditor conducts an assessment in a wrong way, today the risk is that the internal auditor concludes that the organization's objectives were achieved, and in reality they were not achieved"³.

The internal auditor may be punished in two ways because he or she failed to comply with professional standards: may be prohibited from professional practice; may be administratively sanctioned by the senior management echelon for his actions found during the verification of the work through wage penalties, enforcement career on the line, and even termination.

These situations will be analyzed according to the gravity of the faults the internal auditor committed.

When the auditor is guilty of breaching the professional standards such as violating the principle of confidentiality of information which is considered a serious mistake, the penalty may even be criminal depending on the damage or the damage to the audited institution's own interests.

³ Renard, Jacques, *Theory and practice of internal auditing*, the fourth edition, translated from French by the Ministry of Finance under a project financed by PHARE, Bucharest, 2004, p. 114.

Internal auditors and the heads of internal audit structures are not protected against such situations.

If in the first international standards, there is a risk that the internal auditor makes a wrong assessment, the risk today is that the internal auditor provides assurance that the institution's objectives were achieved, when in reality they are facing serious irregularities.

The *Internal audit standards* developed in 2002 recorded a change to be extended only then, that under the main concern of internal auditors not to make mistakes, meaning to properly assess an activity, a program, an institution when the seriousness of the facts was not correctly assessed. The liability actually lies with the manager, who was required to perform risk management and internal control objectives.

In Romania, in the AAIR (The Association of Internal Auditors of Romania) there are concerns and conflicting views regarding the manner of adoption of The Internal Audit Standards, and declaring the adoption of the US Internal auditing standards as national standards, as others to achieve a translation approved by the IIA US.

Standards exist for the delimitation of internal auditor's work; specialization continues its work of analysis and risk assessment, targeting value-added activities and performance evaluation of internal audit.

The above objectives can be met if, in practice, international standards will be implemented in internal audit alongside with its own standards if we tackle recognized good practice in the field, if we have concerns for continuous improvement of the approach to audit and will be objective and critical of our achievements in the area of audit.

Exercise of the powers of the internal auditor with impeccable professionalism, professional standards, the application of recognized good practice in the field and IIA are a guarantee that the internal auditor should take advantage whenever possible.

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THE SYSTEM AUDIT AND THE COUNSELLING OF THE MANAGEMENT INSTITUTIONS ON THE INTEGRATED MANAGEMENT SYSTEM IMPLEMENTATION AND INTERNAL CONTROL

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Abstract: *Management control system is designed, organized and implemented by the management of the organization. Exercising management control is the responsibility of the general management and is a process of great responsibility which requires the engagement of all staff having duties in internal control. The implemented management control system must be a flexible one that constantly move the main effort on activities with the highest risk, according to the signals coming from some malfunctions that may occur in the system.*

Keywords: *internal audit, public entity, internal control/management, standards of audit, consulting, risk management.*

The current and urgent need to adopt and implement a new type of management at the level of public entities is arising from general assessments of the state of progress made by Romania in relation to commitments as member state of the European Union. Undoubtedly, in any public entity there is a certain system of internal control, otherwise its operation would be marked by frequent and severe distortions. Indeed, each leader has to organize and manage the activity: it will set individual tasks for the staff, will develop working methods, will equip the organization with an information system, will oversee staff activities, etc. This does not mean anything else but a system of internal control.

We note that in fact, most managers of public entities used in different ways some components of internal control management system.

In this context, the fundamental question that arises is: what should be done by critically examining the current system of internal control existing in public entities and especially what to do next, for it to be developed, refined up to the stage that allows controlling all the activities?

Implementation of internal control activities - management control system was implemented in a short time due to the process of European integration that has accelerated the transition and integration of the new rules, so the need to improve management control system (provides better results) and to assimilate standardized the organization and implementation.

Implementation of management and internal control for public institutions is a challenge that will contribute to the understanding of its management system and internal control concepts of internal control and internal audit and how relationships between them given that „*internal control is a process that is performed at various managerial levels and with different areas of intervention. Regardless of the actual method of, internal control can be approached by systems theory and understood as a function of a complex management system*”¹.

Implementation of management and internal control is to issue directions of control for carrying out strategies institution and achieving planned objectives that „*a management control system cannot guarantee with certainty achievement institutions*”² since its

¹ Adrian Mitea, etc., *Audit system in public institutions* Bucharest: M.A.I. 2006, p. 80.

² Marcel Ghiță, *Internal Audit second edition* of Bucharest: Economic Publishing House, 2009, p. 161.

implementation by management general of the institution has the following inherent limitations: human judgment may be wrong; the implementation of management and internal control system in the new approach; analyze cost/benefit rationale internal control measures to be implemented, conducted by Head of the public; some people can act in collusion to circumvent the regulatory and management and internal control standards; even the managers themselves can get over their own procedures that they have established public entity.

The implementation process management system and internal control in the institutions are in various phases, depending on the level of general management and line management.

Current implementation of management control system, having regard to implementation stages of management and internal control system, are in various phases of development as follows: in-depth knowledge of management and internal control system by the heads of departments; acquiring control tools existing in the institution and how to use them; inform all employees about the new system of management control; establish those responsible for developing and updating the Registry of risks; establish those responsible for developing and updating procedures formalized, written for each activity within the system.

Implementing a management control system must be pursuing a deeper critical evaluation of the risks looming that could affect the objectives of the scheme after that to make a critical analysis and evaluation of the internal control system existing in the public entity and then continue with steps outlined in the procedure.

Control tools are of great variety and varies from one institution to another, depending on their size, complexity, activities, applicable legal framework, but also the culture of the public, serving to master specific risks that arise as varied as, and is divided into the following six groups homogeneous: the objective and the means, information systems, organization, procedures and controls; defining a program with responsible and timeframes for implementation of each standard in their logical sequence; setting objectives and targets; setting activities and actions to achieve the objectives; self management control system within the institution; system developing procedure manuals and operational activities of the institution; the evaluation of the training staff; systematic monitoring and evaluation of program implementation stage.

Any institution operates by performing attribute related activities and concerted management objectives set by the institution. Control of each function (tasks, subtasks, operations) is an integral part of the control system of the institution. The organization of checks and style of their implementation based on established risk are each responsible for their own activity problem, to which we have the risks relating to the institution as a whole and the overall management of its incumbent. Internal controls should pay particular attention to analyzing all aspects of the culture of the institution and implement internal control activities using all its opportunities for efficiency within internal control function. Where this opportunity is not seized, the task of implementing it returns to audit.

Internal auditors through specific work their duty to know the specifics of the entity that they audit and to collaborate with the audited because „*dialogue between auditor and audited shows that the two partners are aware of the culture of internal control, which is essential to the development environment control and internal audit function. Conversely, if the audited knows nothing about what is internal control and internal audit, we perceive auditors as some external agents which wasted time and money and the climate of cooperation so necessary, is unlikely to install*”³.

Also, management is responsible for organizing a system of control which, when running, is to keep risks at acceptable management of the institution. Manager institution must

³ Marcel Ghiță, *Internal Audit*, Bucharest Economic Publishing House, 2004, p. 40.

establish the general framework, including strategy, policies and control responsibilities, on which it is necessary to devise concrete ways of implementing, monitoring and reporting, followed by periodic revision control system.

The control system is the answer to these risk management activities associated institutions. Under the system of control „control activities are the specific elements (policies, procedures, etc.) that will enable management function, activity, sub-activity or operation under general internal control objectives. Control activities are diverse, depending on the entity and its organizational culture, organizational structure and the number of activities”⁴.

Control activities are the operations and procedures that help ensure smooth implementation of the responses to risk, namely transactions from which it is clear what must be done and procedures to implement these proposed activities. Control activities occur throughout the institution at all levels and in all functions and are part of the process by which an institution seeks to achieve objectives.

Putting emphasis on information systems, control tools are needed in all major and thus can be used two major categories of control of information systems: tools generated by control, which applies to the great majority, if not all application systems and supporting their continuity and smooth running; Application control tools include computerized steps within an application that monitors the implementation of technology; manual process control instruments. Implementation of control activities involve the following steps: preparation of implementation; establishing internal control activities; prioritizing internal control activities. Implementation of internal control activities, whatever they may be, necessary to define the mission and knowledge of the rules to be observed. Periodically or whenever needed „management oversees the implementation stage management control system by the internal audit function and deviations resulting from the targets set, analyzes the causes that determined and has corrective action or preventive necessary”⁵.

Managers, as auditors, must have accurate knowledge of the functions they are responsible, in order to establish control activities that need to be implemented to ensure the efficient and even then „a management control system cannot guarantee the certain goals entity because its implementation by overall management of the entity has its limits”⁶.

There are established internal control activities for implementation, which will be identified by the use of internal control questionnaires.

Management control system adapts and updates continuously depending on the real and immediate risks, to ensure the effective operation under the system of existing resource and act without wasting time and cause damage when a risk manifests itself already produces effects „in other words the control system are not waiting for final products but also directly intervenes in the process when the parameters of control out of the normal range planning”⁷.

Better internal control exercised within institutions directs such activities to achieve its objectives through the procedures formalized, written for each activity.

Internal Audit focuses its efforts on the need to verify the internal control systems risk management besides other internal audit activities.

Internal audit will achieve its objectives if there is a well organized system of internal control, formalized periodically compiled based on professional standards and norms, procedural guidelines, codes of conduct etc.

Managers need to see in the real internal auditors and support a true partner, given that animates the same aspirations and the same objectives, including raising the managerial act, by fulfilling objectives. Managers need to acquire the auditors' recommendations, to perceive

⁴ Marcel Ghiță, *Internal Audit*, Bucharest Economic Publishing House, 2004, p. 41.

⁵ Marcel Ghiță, *Internal Audit*, Bucharest Economic Publishing House, 2008, p. 157.

⁶ Marcel Ghiță, *Corporate governance*, Bucharest: Economic 2008, p. 157.

⁷ Adrian Mitea ș.a., *Audit system in public institutions*, , Bucharest, Publishing MAI, 2006, p. 82.

the help they receive for managing the inherent risks that may arise and jeopardize the achievement system.

Internal audit is considered the highest level of the institution's internal control system. Internal auditors are isolated and ineffective is therefore essential that they work as a team. Professional skills of internal auditor produce real benefits for the institution through a systematic evaluation based on audit standards and best practices, policies, procedures and operations conducted by the institution.

Internal audit, the activities in which they engage, add value both by assessing the internal control system and risk analysis associated with audit activities and the recommendations contained in the report and submitted in order to ensure the objectives of the institution.

Internal control is a general activity in public institutions that increasingly more employees have attributions on the line of control on the activities they carry out and find that *„control function includes: evaluating the results, comparing them with the objectives set, tracing causal the main positive and negative deviations and take corrective or preventive decisions”*⁸.

The added value of internal audit regarding the implementation of the management system and internal control - lately the international standards of internal audit promotes the concept of added value and where internal audit, but there is still much to say about how to assess the value added internal audit.

If internal audit is difficult to quantify the value added work such institution can be considered value added changing the mentality of the audit, risk assessment and recommendations regarding the organization of the internal control system, but they are difficult, if not impossible, to quantify.

The added value is not only the findings of the audit report concluded upon completion of the mission or in the conclusions and recommendations, which actually is a means of communication with the operator of the audit. The added value of internal audit lies in its ability to improve system management of risk and internal control of the institution, so *„there are many benefits of incorporating risk management into the culture of the organization including: greater attention to issues that matter, reducing time lost leading to disputes, fewer surprises, protect reputation, more attention to doing things right in a fair, more likely to achieve business goals, fewer complaints, increased possibilities for change initiatives and achievement of project risk taking and adopting more informed decisions”*⁹.

The internal auditor, through the contribution of its work in the institution must be promoter of value through: savings that occur due to the opportunities they create, avoiding or reducing losses. Achieving these goals that stand before the audit is based on risk assessment consistently calling within institutions where managers agree that these measures are the number one priority.

Lately managers are in broad agreement on how internal audit gives added value, ensures that by its actions the cancellation or mitigation of the most important risks and internal control system functionality. The risk is ignored by some managers who do not understand that *„risk is a term often used but often misunderstood”*¹⁰.

In practice, the institutions face a variety of risks, both internal and external, because these issues can never be considered 100%.

The internal audit helps to identify new risks that managers may face, but the responsibility for identifying and monitoring the effects liquidation risk rests with all managers.

⁸ Adrian Mitea ș.a., *Audit system in public institutions*, , Bucharest, Publishing MAI, 2006, p. 82.

⁹ Marcel Ghiță, *Internal Audit*, Bucharest Economic Publishing House, 2008, p. 218.

¹⁰ Marcel Ghiță, *Internal Audit*, Bucharest Economic Publishing House, 2008, p. 220.

Internal auditors need a cooperative permanent managers from institutions to be able to monitor the situation over time and to assess whether internal audit needs to turn change must develop their skills by raising the level of training and concerns of be aware of changes in the internal audit function, and improving the relations between auditors and auditees.

Internal audit in public institutions is a trend upward, but more needs to be done because both auditors and the auditees need constant improvement of specific skills so we want to make our contribution to the detection, clarification and liquidation shortcomings which still showing in auditing at this stage of continuous improvement.

Need public audit derives from the complexity of their tasks and public entities from the requirement to combat waste in managing public funds, bureaucracy, stimulating responsibility, prevention of dysfunction that may occur in the work of public entities.

Public utility audit, the impact of this activity *is given in the performance of public entities*. Public audit must be approached not as an end in itself but as indispensable utility that provides audited entities achieve the expected performance.

Public audit must be designed and based on the analysis of cause - effect- optimization - prevention the audited activities, thereby contributing to more efficient overall public entities. But the audit should not be limited only to finding deficiencies, but must be geared towards prevention activities imbalances and negative states.

Thus, unlike control, does research related to irregularities financial accounting and damages discovered, apply coercive measures, go to remediation and acts for bringing order to the situation, the audit only issue an opinion, indicates wrongdoing or harm established without but measurable binding them and make recommendations to eliminate the situation.

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THE OPERATIONAL ART – THE MAIN INSTRUMENT USED BY COMMANDERS IN ACHIEVING THE DESIRED EFFECTS TO ACCOMPLISH THE PROPOSED END-STATE

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Abstract: *The complex operational environment and the multitude of actors evolving in crisis management causes the operational art to play a decisive role in achieving the situational awareness, giving commanders the necessary support for carrying out joint operations and integrating all the effects to achieve the desired end-state. Operational art includes fundamental methods associated with the synchronization and integration of military forces and capabilities, in conjunction with multinational partners and agencies in operations that often take place long before the achievement of the military operational and strategic objectives. Using the tools of operational art, the commanders can integrate the objectives, ways and means at all levels of operations, to achieve the desired end-state.*

Keywords: *joint operations, operational art, operational planning process, effects, comprehensive approach, operational design.*

Since ancient times, war has caused profound consequences on the entire spectrum of social life. For this research topic as a whole, i.e., the cause-effect relationships, several sciences contribute, starting with physics and mathematics and ending with the Humanities. "... *The true and deeper study of war would be a whole encyclopaedia of time, which should help all the sciences: geography, physics, chemistry, mechanics, meteorology, biology, medicine, psychology, ethics, history, pedagogy, sociology, law, etc.*"¹.

The study of the military phenomenon was manifested in ancient times, by the numerous works written by Sun-Tzu (cca400-330 BC), Xenophon (430-355 BC), Flavius Mauricius Tiberius (539-602), Mauricius de Nassau (1567-1625) Clausewitz (1780-1831), Jomini (1779-1831), etc.

Military thinking in Romania experienced a first period of affirmation during the time of princes and leaders of armies of the XIV-XVIII centuries. This was reaffirmed in the XIX-th century and the first decades of the XX century, when leading thinkers and politicians such as Balcescu (1819-1852), A. Iancu (1824-1872), Kogalniceanu (1817-1891), AI Cuza (1820-1873), military theorists such as Gh. Slăniceanu (1835 - 885), C. Hârjeu (1856-1928), etc., historians and sociologists such as Nicolae Iorga (1871-1940) and D. Gusti (1880-1955) made significant contributions to the design and development of the modern Romanian military thinking.

After the Second World War occur research systematized of the phenomenon of war, met in a science, as polemology who intends to deal with the study of wars as social phenomena, their types, causes, effects, driving forces, reasons and their functions², and also with the study of *war, peace and conflict*, the organic trilogy of social life. This term comes from the Greek polemos, meaning war, turmoil, conflict, agitation, used for the first time by the French researcher Gaston Bouthoul. He believes that the old adage novel "*if you want peace, prepare for war*"³ had to become *if you want peace, know the war*.

¹ Dimitrie Gusti, *Opere*, vol. IV, Editura Academiei Române, București, 1970, p. 138.

Despite the fact that today war is sometimes accepted as an end of politics, it continues to act as a political factor, a *continuation of political relations ... by other means*² or as some theorists define it, a consequence of the absence of political power capable to manage the tendency towards confrontation. The political decision always underpins military engagement between two or more entities, even when it occurs spontaneously.

War is a product of the human society, politics, a very complex political and social phenomenon with many causes and multiple determinations; it is a way of solving conflict situations by violent means. War is not a thing in itself and cannot be treated as a thing in itself. War as a way of resolving crises, conflicts or tensions, it has become increasingly less accepted by states and especially the population. Although it continues to be a solution, people are becoming more reluctant to this path.³

The beginning of the XXI century has been marked by profound transformations in the architecture of wars, as is the entire social life, which in turn will result in military trials striking metamorphosis.

In the current context, military science uses instruments that have overtaken much improvisation, arbitrariness, empiricism. An approach to the military science by reconfiguring the general theory of science and military art on the foundations of ways analytical logic specific theory of knowledge of social sciences, will certainly lead to an earlier settlement of purely technical issues, to the theoretical and practical consolidation of the new strategy of military knowledge with real consequences of the military understanding of the millennium.

The existential concept of military science stems from the fact that it provides the commanders with knowledge and viable solutions for planning and conducting the armed struggle for the effective preparation of the combatants. Considering these premises, military science is defined as that *"particular social science, including the system of knowledge about laws and principles of armed struggle, methods and procedures of military action"*⁴.

After the considerations set out by Mario Bunge, the referential function configures how to integrate the components of the military and the phenomenon of armed struggle and also the relationships established between them and consists "to provide an image of a field of reality"⁵. By explanatory function is the trying to understand and explain the facts, events, rules for determining the causes. By the predictive function is trying to the project the evolution of events and military phenomenon, based on prior results. Through the instrumental function are performed in fact the other three described above.⁶

The complexity of military science is reflected in its structure, based on the following disciplines: general theory, military art, military art history, geography military, military organization theory, theory training and educating troops. At the same time, the progress of fundamental sciences of man led to the emergence of new disciplines in military science, some branches tangential, such as military psychology, sociology, military, military leadership, strategic game theory and others that are still being set up.

The history of military art studies wars, (campaigns) and the armies of all historical periods, actually delving into *the evolution of the organization and structuring of military and combat technique of equipping them; conducting combat operations; critical analysis of military art used; study document management; study modes of action of various military structures in the campaign; politico-military consequences of the conflict*. Military science is the foundation for all the components listed (military art history, military geography, logistics,

² Carl von Clausewitz. *Despre război*, București, Editura Militară, 1982, p. 67.

³ *** ARTA MILITARĂ DE-A LUNGUL MILENIILOR București, Editura MApN, 2004, p. 6.

⁴ *Dicționar militar*, Editura Militară, București, 1972, p. 299.

⁵ Colectiv, *Teoria cunoașterii științifice*, Editura Academiei României, București, 1995, p. 138.

⁶ Tudor Stoian, *Cunoaștere și adevăr în dezvoltarea științei militare, în „Probleme filozoficeale științei militare”*, vol. IV, Editura Militară, București, 1994, p. 53.

medicine, etc.), supporting the theory that "it does not provides recipes, it is mandatory publicized by doctrine."⁷

Studies in military literature have established that military art, like all arts, began at the same time with the competitions and fighting in the primary stage of humanity, evolving to clashes between politically organized human groups.

Military art -said Clausewitz- fully meets both the theory and that of the actual action "*Where the logician draws the line, where the premises ends, which are a result of knowledge where judgment begins, there begins art. (. . .) where the goal is creation and production, there is art; science (theory-n.n.) reigns where the goal is research and knowledge*"⁸.

The doctrine of military art represents a set of theoretical and practical of conceiving military action by the use of effective forms and methods of struggle. Taking advantage of achievements "action sciences", crediting the general principles of human action, military art theory studies both their implementation in the military and warfare specifics, mission that cannot be performed by any other disciplinary action.

The principles are born in the form of "*practical rules, practical directives, recommendations with a high degree of generality, the intervention intentional, desirable and achievable in a possible physical or possible social, whose topic covers all class of events or conditions that describe human activity or field of human activity, concerning the selection of action, organization, efficiency and effectiveness, etc., so as to satisfy the necessary and sufficient condition simultaneity*"⁹.

In military operations, in addition to the general principles (i.e., freedom of action, cooperation, economy, efficiency), type-specific principles of human action were issued on the mode of action - *surprise*; the type of action in relation to purpose - *offensive, defense*; to establish the purpose of action - *a clear definition of the objective (mission)*; forces and resources migrating in time and space - *manoeuvre*; strengthening of an action - *safety*; exposure of action - *plans simplicity*.

Armed struggle is a violent confrontation between two or more adverse military forces, which aim essentially destroying or capturing the opponent. An extremely complex action, the armed struggle can be defined based on a logic model as "*a system of a few basic elements, namely: political director element and its influence on the armed struggle; material component of the armed struggle (the forces and means); conceptual component of armed struggle (physiognomy, principles, forms and techniques of combat); the geo-temporal in any fighting taking place (space and time)*".¹⁰

Military art is found at all levels, strategic, operational and tactical, the level of an operation being given by the military and/or political results of achieving the military purposes. At the same time, it can be said that the management level of troops and resources, and also the space where the operation takes place are not necessarily definitive in outlining the operation level.

Strategic operations aim to achieve strategic objectives / National Alliance / EU. To do this, campaign operations / strategic level operations are undertaken. *A campaign is a set of military operations planned and executed to achieve a strategic goal in a period and geographic area established that involves ground forces, naval and air and other forces, institutions, agencies and nongovernmental organizations international*.¹¹

⁷ Herve Coutau Begarie, Breviaire strategique, p. 64.

⁸ Carl Von Clausewitz, Despre Război, Editura militară, București, 1982, pp. 132-133.

⁹ Florin Tenescu, Cunoștințe generale asupra războiului și studiul lui, București, Tipografia Școlii militare de artilerie, 1921, p. 33.

¹⁰ Lupta armată, Editura militară, București, 1978, p. 21.

¹¹ Doctrina Armatei României, București, 2012, p. 76.

Operational level military actions aim at achieving of military goals set for a given area of operations, thus leading to the achievement of strategic objectives. The operational level is „the level in which major military operations are planned, conducted and sustained to accomplish strategic objectives within theatres of operations - TO or areas of joint operations - ZOI¹²”. In this context operations are in battle type / operational level operations.

Tactical level operations are aimed at planning and executing manoeuvre and fire for units / sub-units to achieve the objectives that being fulfilled lead to accomplishing operational level objectives. *At the tactical level forces are committed to fulfil missions / tasks and achieving objectives. The successful achievement of these objectives ensures success at operational and strategic levels.*¹³ In this sense, at a tactical level the type of operations performed is battles and clashes.

In a general sense, operational art is defined as a link between military strategy and tactics, or in another manner, according to SMG / PF5 as "a component of military art which describes the employment of forces to achieve strategic objectives and / or operative, by design, organization, integration and execution of campaigns, major operations and battles."¹⁴

The Doctrine of the Romanian Armed Forces stresses that "The operative art consists in the engagement with ability of the military instrument to achieve the strategic and operational objectives through design, organization, integration and management of campaigns, operations¹⁵."

The operative art is also defined and by the way that knowledge, skills, experience and imagination of commanders are materialized, supported by their major states to plan military actions and to use forces to fulfil the established objectives. "In its simplest form, the operative art determines what forces will perform a certain operation, when, where and for what purpose."¹⁶

The operative art imposes the power to predict a broad horizon of the situation and the potential to plan, organize, execute and evaluate. It supports major commanders and their states to prioritize and understand the conditions favourable for victory. Without this art, campaigns and military actions would be a series of events with no connection between them. The operative art defines deployment of forces, engagement or withdrawal to / from military action sitting and carrying battles and military operations which are essential for achieving operational and strategic objectives. This includes methods based on synchronization and integration of forces and fighting capacity, combined with those of partners and multinational agencies in actions, in many cases, takes place long before reaching the desired end state.

Considerations of operative art at the operational level must be applied simultaneously with the understanding of connections complicated of all factors influencing the planning and execution of operations, namely the use of intelligent planning resources, monitoring the possibility of using of the forces, space, time and information effectively in the planning and design operations by all the commanders. Military operations can run concurrently in the entire spectrum of conflict, while changing campaign themes. It is necessary, of course, an open horizon, character forecasting a thorough identification of the relationship between means and ends.

The operative art, as set forth in the Doctrine of the Romanian Armed Forces "is based on the skills of a commander to solve complex and unstructured problems and to create a logical and clear framework, sometimes intuitive, to facilitate planning and transmission orders. These actions are implemented through a combination of skills of the commander and

¹² *Idem.*

¹³ *Doctrina Armatei României, București, 2012, p. 19.*

¹⁴ *Doctrina planificării operațiilor în Armata României, București, 2013, p. 29.*

¹⁵ *Doctrina Armatei României, București, 2012, p. 16*

¹⁶ *Doctrina planificării operațiilor în Armata României, București, 2013, p. 29.*

the major state aided by the design processes specific to the operation and the management of the operation¹⁷”.

The operational design requires the development of a general idea, based on the analysis and estimation of mission in shaping it, as in the whole process of planning operations. The operative art plays an important role.

The operative art and operational design creates a bridge between strategy and tactics, helping commanders and major staffs to plan and execute operations and optimal achievement of the desired end state. The operative art is the attribute of joint force commanders’ groups or at least a structure of such groups, which through experience, mentality, intuition, judgment and their vision promotes the attainment of the desired end state.

The operational design enhances operational art vision with an approach that supports operational commanders and major staffs to include the nature of the operational context, the obstacles they face and determine the general solutions to existing problems. Operational design uses many elements of design elements - concepts and levers offering commander and major staff the possibility to develop and refine a general approach for orienting and guiding planning of the operation.

Planners use operational design for any military operation met, from simple to complex. One of the important advantages of operational design is the focus in a very short time for understanding and addressing operational, which is usually difficult to identify and define. Current operational environment requires some challenges so complex that transcends the comprehension of the problem and views a solution of a single individual. The challenge is proportional to the number of partners inter-organizational and inter-agency participating in joint operations due considerations to be taken into account. The involvement of these partners supports planners to understand their perspective and to use their expertise for a quick understanding of the environment and operational issues. Operational design is fundamental in building common understanding images and to create unity of effort¹⁸.

Meanwhile various approaches developed and improved specifically for the system analysis of a state of conflict: the traditional approach, the system approach and the design approach. The differences between them are evident in the way we put in question the problem solved, the trend of simplifying and solving the pieces to a comprehensive approach, from all points of view, respectively the use of systemic thinking.¹⁹ In the "traditional" approach, the main effort focuses on the fragmentation of complex phenomena into simple components and dividing into any parts needed to be resolved separately, in the best possible way.

The system approach has as fundament the systems’ theory, and analyses the operational spectrum in a holistic approach, examining the interactions and connections between its parts. For understanding the operating principle of the system are taken into account factors which may affect the relations between the parts, but that minor changes can have unpredictable results on components in the system.

The design approach emerges from the systemic approach, contributing to a comprehensive vision of the situation, allowing the commander to understand its unique character and also to view a desired end state by determining the effects on the system.

This approach also has weaknesses, with reference to the readiness of Planners of common operating procedures which apply to them and to incorporating all factors which require the effective use of reduced available time.

Operational design encompasses aspects of military theory, systems theory, studies on the nature and resolution of problems and determination to judge critically and creatively in

¹⁷ Doctrina Armatei României, București, 2012, p. 77.

¹⁸ Planner’s Handbook for Operational Design, Suffolk-Virginia, 2011, p. III-3.

¹⁹ Doctrina planificării operațiilor în Armata României, București, 2013, p. 33.

support of the commander and the staff to understand and develop solutions for complex military issues.

In numerous writings it is mentioned that critical and creative thinking are the fundamentals for design. For example, US Army manual FM 5-0 says that "Critical and reflective thinking captures lifelong learning which are essential for design. Creative thinking involves thinking in new and innovative ways while leverages the imagination, understanding and new ideas."²⁰

Operational design is not an end-state, but rather a journey of discovery. At the time of solutions to simple military problems can be clear right from the initial stage of the mission analysis process, critical and creative thinking can help commanders and planners: to deepen complex operational environments; to understand the true nature of the issues poorly structured; to In military theory are found in a horizon stretched topics from tactics to strategy, theories of military analysts which apply directly in operational design and planning process, such as the idea on the operational design and its elements, centre of gravity and the climax, of the Prussian general Carl von Clausewitz, in his book "About war", published in 1832 and subsequently translated into several languages, which is found in all contemporary approaches. However, Clausewitz believed in dialectical approach to military analysis as a "method of investigating intellectual." Also known under the name of technique Socratic to expose false ideas and to cause the truth, dialectic is basically a intellectual dispute of ideas between two or more persons that have different beliefs of a situation but seeking to reach a common point. A proper and fair understanding of the operational environment and of the problem to be solved is fundamental. Dialectical approach develops critical thinking.

General in the French army and later in the Russian one, Baron Antoine-Henri Jomini, one of the most outstanding writers in the art of war from the Napoleonic era, wrote about the interior and exterior lines of operations, defining it first as "... These (lines) are adopted by one of the two armies to oppose greater hostile force and having a general direction that can (create a centre of gravity) and manoeuvre with all his strength in a shorter period of time than it would take for the enemy to oppose with greater force. Exterior lines lead to the opposite result and are formed by an army that operates simultaneously on both sides of the enemy, or against several of its forces."²¹ "The line of operations is a component of operational design and one fundamental operational approach. Stress lines and lines of operations can be used in combination to describe the operational approach.

The English theorist BH Liddell Hart defined the term of *indirect approach*, which involves a whole, avoiding enemy resistance (actually issued by Sun Tzu). An important aspect of operational design is the foundation of how to attack the opponent's centre of gravity, both directly and indirectly. After the First World War, Liddell Hart developed the causes of the high rate of losses incurred during the war. He systematized the set of principles that he assessed as the basis of a good strategy, principles which had been ignored by most of the commanders of the First World War. He incorporated these principles into a single element: *indirect approach*, and two essential components: direct attacks against an enemy that never defend positions are not working and should not be employed; and for victory one must first shake the enemy's balance, which is reflected by the main attack, but this must be done before it starts. "In strategy the longest way is often the shortest way; a direct approach to the target exhausts the attacker and strengthens the compression resistance, while an indirect approach weakens the defender waiting by disturbing its equilibrium."²²

Military operations are certainly complex, and there are too many variables to be taken into account. In some aspects, the decisive operations in the battle force-against-force can be

²⁰ Field Manual (FM) 5-0, *The Operations Process*, March 2010, pp. 3-1.

²¹ www.scribd.com, traducere din Baron Antoine-Henri Jomini, *Treatise on Grand Military Operations*, p. 93.

²² http://en.wikipedia.org/wiki/B._H._Liddell_Hart, traducere.

considered simpler than counterinsurgency, counterterrorism, and other actions against the less advanced enemy, because these circumstances favour mainly an analytical phenomenon of making decisions than an intuitive one. In this context, the strategic objectives are often clearer; the final state being defined precisely, they tend to trust the rule of equipment, training and the other's training.

The decision-making ability and the critical and creative thinking must be viewed against these challenges. In its natural form, operational design is based on critical thinking which causes a current and consistent understanding of the connections between the system's elements. A successful operational design is the result of a relevant operational approach developed after understanding the environmental and operational problem by employing critical and creative thinking, connected and adapted to the commander's intent.

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OPERATIONAL APPLICATIONS OF THE PSYCHOLOGY OF SUICIDE ATTACKS IN AFGHANISTAN

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Abstract: *The topic of Suicide Improvised Explosive Devices (SIEDs), as relatively new phenomenon in Afghanistan is, this article examines the implications that the use of SIEDs in Afghanistan has for psychological relevant not only for information operations (INFOOPS) but also for the entire Joint military operation in Afghanistan. After introducing the bases of the psychology of suicide attackers and the role of the cultural awareness in military operations (PSYOPS), in particular. Looking at different positions concerning the legitimacy/illegitimacy of SIEDs, the document looks at the individuals who want to become martyrs and their motives, as well as at the effect of their attacks on the Afghan target audience (TA), which can be used to further de-legitimize SIEDs in the perception of the TA, and to motivate the Afghans to support efforts against their use.*

Keywords: *Psychology, Suicide Attacks, PSYOPS themes, Afghanistan.*

Introduction

Motto: "Think of counterinsurgency as an argument to earn the support of the people. It is a contest to influence the real and very practical calculations on the part of the people about which side to support. Every action, reaction, failure to act, and all that is said and done become part of the debate."¹

In counterinsurgency, essentially, and in psychological operations words matter. The choice of words used to describe opposing forces, convey subtle, yet strong messages. Considering these factors, what follows is an analysis of the behavior of suicide attackers and recommendations on describing their actions, based on scientific finding of the psychology of suicide attacks. On one hand, if well thought out and consistently applied, they can support broader strategic objectives to isolate, alienate and de-legitimize an enemy in the minds of the target audience (TA). On the other hand, they can also be counterproductive to mission. Terms that may seem to be innocuous or that de-legitimize an enemy can in fact create negative impressions of force, reflect cultural insensitivity and be outright offensive.

Suicide attacks represent one tactic of aggression with tremendous strategic impact on target audience and with a strong perceived effectiveness when compared to conventional weaponry and methods. Though the concept of suicide as a weapon is old, Hezbollah's decision to begin suicide bombings in the early eighties, alongside the Liberation Tigers of Tamil Elam (LTTE), it is considered the start of what has become a familiar pattern of attacks world-wide. Pedahzur in 2005 refers to suicide terrorism as a diversity of violent actions perpetrated by people who are aware that the odds they will return alive are close to zero. This captures suicide bombing, and the range of all suicide tactics known.²

Recent research into the psychology of terrorism has increasingly identified it as a fundamentally social act. Descriptions of the gradual socialization of individuals into violent

¹ General Stanley A. McChrystal - COMISAF COIN Guidance, 2010.

² Pedahzur, A. - Suicide Terrorism, Cambridge, MA: Polity Press, 2005.

extremist networks, combined with isolation, ritual and ideology, result in a willingness to commit acts previously unthinkable to that individual - suicide bombing being the prototypical example. An entire community perceives itself to be suffering unjustly to the extent that suicide terrorism is seen as a valid response, and is normalized within the community's value system. If a community reaches such a stage, it remains only for a violent extremist group to select willing and vulnerable candidates as recruits who could act with minimal training and psychological preparation.³

In Afghanistan, suicide bombers or suicide improvised explosive devices (SIEDs) as they are called in military language, are a relatively new phenomenon. The first use of a SIED in Afghanistan occurred in September 2001, when a group of Arab AQ fighters posing as journalists killed Ahmed Shah Massud, the leader of the Northern Alliance. Since 2005, INS have considerably escalated the use of the suicide bombers.

The psychology of suicide bombers

The terrifying nature of many suicide attacks and a lack of understanding of the historical origins of their tactics led to several misconceptions, found primarily in the popular press, which consider that suicide terrorists are being either driven by mental illnesses or purely religiously motivated.

While there may be occasional pathological cases among membership, this is unlikely to be a significant factor in explaining the motivation of the majority of suicide bombers. It is claimed that extremist organizations cannot afford the risk of employing irrational and unpredictable individuals to carry out significant attacks in which they have invested resources. In a similar vein, though personality characteristics and the life events preceding them may play a role in a particular individual's decision to engage in suicide terrorism, there is little evidence to date that those who join extremist organizations or volunteer for suicide missions have a consistently identifiable personality type that is different from that of the general population⁴.

Current consensus on the psychology of terrorism states that the most common factor determining whether an individual joins an extremist organization is the social environment in which he or she lives. The suicide terrorist is seen as the last link in a long organizational chain that involves numerous actors and strategic decisions. Understanding the context and the sets of individuals involved in radicalization shifts the focus from individuals to the groups, in which suicide terrorist attacks are planned, organized and initiated.⁵

According to Pedahzur (2005), radicalization toward suicide terrorism involves, at the same time two broad types of motivation. The first, which he terms the 'commitment' motivation, is driven by *individual allegiance*, generated through socialization processes, to a group or organization that uses terrorism as a strategic weapon. The second, deemed the 'crisis' motivation, involves an *entire community* arriving at a high level of support for suicide terrorism, and thus, a form of commitment to the goals of a terrorist organization. When this happens, the recruitment of an individual to carry out a suicide attack can be done quite easily, and the elaborate socialization processes described above do not need to be carried out in order to arrive at a state of readiness to be martyred. Terrorist recruitment thus becomes an instance not of radicalization, but of mere mobilization.

In many societies, the individual act of suicide is perceived as taboo and as such marked out as a prohibited behavior. However, when a community at large perceives itself to be suffering discrimination, oppression and/or marginalization over an extended period of time, a shift can develop in the psychological connotations around the act of suicide, when it

³ Pape, R. - *Dying to Win: The Strategic Logic of Suicide Terrorism*. New York: Random House, 2005.

⁴ Victoroff, J. & Kruglanski, A. - *Psychology of Terrorism: Key Readings*, New York: Taylor and Francis, 2009.

⁵ Wilkey, Nicholas - *Suicide Attacks in Afghanistan and Pakistan*, 2014.

is presented as countering the situation of suffering. Gradually, notions of honor and sanctity, and the need for violence as a response, are normalized within the community's value system. The community itself acts to reinforce a unifying perception around the value and status awarded to the suicide attack. In this situation, each suicide operation, whether successful or not, will cause a reaction among the community that will either implicitly authorize further attacks, or condemn and marginalize such behavior.⁶

Therefore, the need to win and maintain popular support in the theatre of operations is vital. The contest for the support of the population provides counterinsurgency with its principal distinguishing characteristic; it is concerned primarily with shaping the population's perceptions. This is a difficult and intangible business. It is one made even more complicated when operating in a country whose culture is not well understood by the intervening forces. It places a premium on developing cultural awareness and maintaining continuity in approach. Each counterinsurgency campaign requires an agreed single vision of the future for the host nation that is consistent across any coalition or alliance⁷.

The core of the Afghan culture is represented by Pashtunwali. It defines relationships among relatives, regulates relations between groups, and also provides a traditional legal structure to resolve disputes. In short, Pashtunwali is a coherent system of social norms, which can, from time to time, cause confusion and misunderstanding among outsiders, as well as conflict with so-called "Western ways". While the term means "Pashtun way" and the tradition was developed among the Pashtuns, it underpins social behavior among all Afghans, whether Pashtun or not. The most important aspect of Pashtunwali is the importance of honor. In many ways, Pashtunwali is all about the maintenance of honor.

Because of this, Afghans take offence much more easily and seriously than many other nationalities. An offence to local nationals may result in a deviation on the Joint Force unity of effort, required for a long-term success across the country of Afghanistan, causing local nationals to isolate themselves from Coalition Forces (CF) and the Government of the Islamic Republic of Afghanistan (GIROA), causing them to cooperate with insurgents, or even prompting them to joining insurgents and taking arms to fight along the terrorist side.

The means of transmission of messages within and between communities play a critical role here. The values and norms that facilitate an extremist organization's ability to recruit operatives for suicide attacks appear to facilitate rapid diffusion because they tap directly into latent angers and fears that are linked to systems of beliefs and core values. When this is explicitly encouraged, through mass communication rituals such as the distribution of pre-attack video testimonials and posters celebrating suicide attacks, the concept of suicide terrorism as legitimate resistance can catch on.

The profile of the usual suicide bomber in Afghanistan differs from other theatres. In Afghanistan, most attackers are relatively poor, uneducated, young (mostly 14-25 years old) and impressionable. Most of the perpetrators are Pashtuns from Afghanistan or Pashtuns with Afghan ancestors living in refugee camps in Pakistan. Some attackers have apparently been orphans, and a few were drug addicts according to Afghan National Security Forces. While there have been a few cases where women were used as SIEDs in Iraq, the role of women in Afghanistan as SIEDs is unknown.

⁶ Jennifer Sheehy-Skeffington - Social psychological motivations of suicide terrorism: A community level perspective, Paper presented at the 32nd Annual Scientific Meeting of the International Society for Political Psychology, Dublin, Ireland, 14-17 July 2009, p. 11.

⁷ British Army Field Manual- Countering Insurgency, Volume 1 Part 10, Army Code 71876, October 2009.

Effects on Target Audience

SIEDs are delivering a disproportionate effect due to their psychological impact and high casualties. This effect is also visible in international media reporting, although SIEDs (including Personnel Borne IEDs/PBIEDs and Suicide Vehicle Borne IEDs/SVBIEDs) account for roughly 5% of all IED attacks in AFG. However, they cause 40% of all IED casualties. SIEDs are usually employed in urban areas and the South and East of the country. They mainly kill Afghan civilians.⁸

The spectacular effect caused by SIEDs undermines the TA's trust in GIRoA and CF. By detonating SIEDs, INS are sending the message that they are commanding highly motivated fighters who are ready to sacrifice even their life and who are able to penetrate the cities controlled by GIRoA and CF at will. While insurgents (INS) presence in cities like Kabul is relatively weak, their SIED attacks on the Serena Hotel in 2008 and 2014, and the Indian Embassy in 2008 or Indian Consulate in 2016 have contributed to the perception that they are stronger than they really are.

However, the lack of a "Martyrdom culture" in Afghanistan makes it harder for the INS to exploit SIEDs in order to inspire other to join them. There are few cases where INS produced videos showing the last wills of attackers to inspire others. UNAMA assessed that the attackers lack of intellectual sophistication would make such videos unattractive to viewers anyway.

SIEDs are also influencing target audiences outside Afghanistan. Successful and spectacular attacks can undermine the political will of the populations of nations which contribute troops to Resolute Support Mission. SIEDs have also led to the withdrawal of NGOs or a reduction of their activities, thus slowing down reconstruction and development. At the same time, SIEDs have been used to mobilize international fighters or financial support for INS in Afghanistan.

The support for SIEDs among the Afghan TA is relatively low. While in Lebanon or the Palestinian Territories posters showing "Martyrs" and public celebration of their "Martyrdom" are common, this has not been observed in Afghanistan yet.

While fighters who have died in combat are highly respected by the TA, suicide bombers are mostly perceived as misguided victims or enemy infiltrators who do not fight against an enemy, but kill Afghan civilians or Afghan National Security Forces (ANSF) soldiers. The bodies of dead attackers are rarely claimed by relatives. In public statements, most Afghans are claiming that the attackers are coming from outside the country, mainly from Pakistan. The idea that the attackers are coming from Afghanistan is perceived as insulting to the honor of Afghans.

Targeting enemy civilians is considered as unlawful, although some these scholars argue that non-combatants supporting military forces or missions are also legitimate targets. Furthermore, contributing nations to Resolute Support Mission are not considered as opponents by these scholars since they are supporting a legitimate Islamic government. Civilian casualties caused by SIED are justified by blaming INS opponents for their occurrence. INS are claiming that their opponents act "cowardly" by positioning themselves near civilians, thus leaving INS no choice but to accept civilian casualties. Another justification of killing Muslims is to declare them Apostates (this practice is called "Takfir"). It is stated that Muslims killed in attacks have become Apostates through their support of GIRoA and CF, and the killing of Apostates is acceptable and even mandatory according to most interpretations of Islamic law. Innocent bystanders who did not actively support GIRoA or CF are called "involuntary Martyrs" whose lives were legitimately sacrificed as part of SIED attacks.

⁸ United Nations Assistance Mission in Afghanistan (UNAMA): Afghanistan. Mid year report; Protection of Civilians in Armed Conflict, 2010.

Recommended operational applications

The major elements of a psychological operations campaign designed to counter SIEDs should refer to inhibiting potential terrorists from joining terrorist groups, producing dissension within groups, facilitating exit from groups and reducing support for groups and their leaders, including insulating the target audience, the public, from the intended goals of the terrorist to terrorize.

Since most of the infrastructure supporting SIEDs is based in north-western Pakistan and therefore out of reach for CF PSYOPS measures, PSYOPS has to focus shaping the perceptions of the Afghan TA, especially on the perception of those parts of the TA who approve of with the use of SIEDs or are indifferent to it. These parts of the TA can potentially be motivated to report suspicious behavior and help ANSF and the International Force prevent suicide attacks.

1. Indirect targeting of potential attackers

Potential attackers are completely isolated from outside influence once they start indoctrination and preparation for their mission. It will be almost impossible to reach them once they have crossed that line. Therefore, potential attackers have to be targeted indirectly:

- Via parents and relatives: Unlike in some Arab countries, suicide bombers are not perceived to increase the honor of the families they come from. Families usually do not publicly celebrate the fact that one of their sons has become a suicide bomber. PSYOPS can increase the willingness of families to prevent their sons from conducting suicide attacks by highlighting the shame it brings to the perpetrators and their families, and by stressing the violation of Afghan traditional and Islamic norms connected to these attacks. For credibility reasons, PSYOPS should not pronounce judgments on Islamic issues, but should feature Afghan Mullahs or other Islamic authorities doing this. However, a certain percentage of suicide bombers are orphans, and some of those who are not have stated that they did not inform their parents about their intentions. Arrested attackers who still had parents stated that they felt contempt for them because they did not follow Islam in the correct way.

- Via Mullahs: Mullahs are in a credible position to delegitimize INS definitions of Islamic law. While potential perpetrators are unlikely to be able to understand complicated theological arguments, they will understand the difference between lawful and unlawful. NATO and CF should engage the Ministry of Haj and Religious Affairs (MoHRA) to make sure that anti-INS education is emphasized in Friday Sermons and other activities of Mullahs. We should be aware that denouncing suicide bombers carries a risk for the Mullahs who decide to do so. On the other hand, Arabs or other perpetrators from outside the region are only playing a minor role among the suicide bombers in the theatre. Those perpetrators tend to be better trained and indoctrinated and more radicalized than local attackers. These persons are therefore harder to influence with PSYOPS measures.

2. Recommended Master messages

For delegitimizing SIEDs and motivating the TA to report suspicious activities, the following messages are suggested:

- SIEDs are mainly killing local nationals (LNs): While the targets of suicide IEDs are mainly international diplomats, CF and ANSF, the majority of casualties are Afghan civilians. Children are disproportionately affected by SIEDs because they tend to gather in crowded places where SIEDs are usually used, and because they are more vulnerable physically. Although INS usually do not target local civilians, they consider their death as acceptable, thus showing complete disregard for the lives of LNs. The TA rejects this behavior, which can be exploited by PSYOPS by highlighting that INS are the actual enemies of the people of Afghanistan who are killing the TA's fathers, breadwinners, brothers, sons, mothers etc.

- Suicide IEDs are dishonorable: The TA highly appreciates acts of individual heroism. INS propaganda tries to portray SIEDs as such acts. However, suicide bombers do not face their opponents like true warriors do, but sometimes hide themselves under Burqas or behind women and children. UNAMA reported that INS have placed women and children in SVBIEDs to avoid suspicion and to allow the attacker better access to his target. If attackers did not get the permission of their families to leave their women and children behind, they are violating their obligations towards their families. Suicide bombers should be portrayed as weak persons who have been manipulated to carry out such acts.

- Killing of Muslims is illegitimate: Several attackers who were arrested or gave up have stated that they felt deceived by INS, who had allegedly told them that they were about to attack non-Muslim international soldiers. When they saw that the actual target were ANA soldiers or other Muslims, they lost the motivation to continue with the attack. INS propaganda is sometimes claiming that supporting GIROA or the International Force is apostasy, and the punishment for apostasy is death in Islamic law. However, declaring somebody an apostate is something that usually requires that person actively denouncing Islam. The majority of the TA and Islamic scholars in Afghanistan do not share the INS interpretation of Islamic law in this regard.

- Resolute Support Mission soldiers are not a legitimate target: Afghan Islamic scholars have stressed that they are in Afghanistan by the invitation of a legitimate Islamic government and supports this Islamic government and the Muslim people of Afghanistan. Therefore, they do not represent an infidel army invading a Muslim country and is not a legitimate target. INS will try to counter this message by calling GIROA an “apostate government” and claim that it has turned away from Islam, thereby becoming a legitimate target itself.

- SIEDs are an Arab or foreign phenomenon: Many Afghans instinctively reject the idea that Afghans could be suicide bombers. Reasons stated are that such acts violate Pashtunwali, that they are dishonorable and that they are against Afghan culture in general. The TA is prone to believe that suicide attacks are a phenomenon imported to Afghanistan from Arab countries or Pakistan. Since xenophobic feelings towards these countries are common, highlighting connections of attackers to these countries will make them less acceptable to the TA.

- Suicide bombers have no respect for the sanctity of Mosques: In several cases, SIEDs were used in or close to Mosques. This can be used to show that INS have no respect for Islam, and that they are the actual enemies of Islam.

While we cannot make direct statements on issues of Islamic law or the Islamic legitimacy of SIEDs because this would be perceived as illegitimate by the TA, PSYOPS products can quote or show Islamic scholars or credible Afghan authorities making such statements.

CONCLUSION

The membership of an extremist group could play a supportive role for a vulnerable individual, potential attacker, and it can reduce his uncertainty and enhance the self-esteem, thus treating some of the wounds caused by difficult personal experiences. Specifically, violent extremist groups offer an ideology with a strong moral component, profound meaning, and an idealized vision of the future. Such a message can also be used by recruiters to extremist groups, to attract those who are not yet actively seeking alternative identifications.

Whatever the type of motivation a group has, the insurgent leader explains the belief or idea behind it in a way that people can understand, appreciate and believe in. The movement’s ideology must explain the difficulties its followers are experiencing and point to the only means (insurgency) by which those ills can be remedied. A strong message will help

to mobilize support. Examples of such difficulties include: religious based persecution; wrongs committed against a group, sect or religion; desire for justice; ethnic aspirations or liberation from foreign occupation; influence and exploitation. Ideology provides the focus, the lexicon and a means by which followers can understand their condition and the ways and means by which the insurgent will correct it.

Terrorism is a vicious species of psychological warfare waged through the media. If one accepts this premise, then the war against terrorism is a war for hearts and minds. Therefore, intervention strategies might include improving the resilience of communities to violent extremist ideology, and addressing the grievance that such an ideology exploits. If it is not possible to change a particular set of structural conditions, then attempts to influence might be limited to decreasing support for violence, as opposed to trying to increase support for the Alliance. However, considering that our mission is about 20% kinetic and 80% influence, presenting a positive image at all times and in all contexts, is mission critical. It requires a strong understanding of the culture and continuity in this approach.

In sum, coordinated information operations are seen as an underutilized but critical weapon in combating terrorism. It will take years to alter attitudes, for when hatred is deeply inbred it does not easily yield. To conduct sophisticated strategic psychological operations campaigns requires nuanced research and analysis of the history, politics, psychology and sociology of potential enemies, and in particular of their leadership and strategic culture.

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