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GEOSPATIAL SUPPORT ARCHITECTURE FOR THE ROMANIAN ARMED FORCES

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Abstract: *The technological advance witnessed in the last decades, the widening of the threats spectrum against national security as well as the development of unconventional means of operations ask to redefine some processes to support the availability of information in short time where is needed. Privileged beneficiary of the technical evolutions in areas like sensors, analysis methods, automated processing and communication, the geospatial domain has the potential to significantly contribute to the best decision making for a large variety of missions.*

In this article a geospatial support architecture for the Romanian Armed Forces, adapted to the new realities, is proposed. Thus, in the first part of the paper, the factors that influence the geospatial support are analyzed. Then, a method to describe the geospatial support architecture is setup. Finally, based on a holistic framework for enterprise architectures documented in academic literature, the eight perspectives of the geospatial support architecture are presented.

Keywords: *geospatial, enterprise, technology, information, architecture.*

Introduction

Designing a geospatial support architecture (GSA) is necessary to respond to the soldiers' needs to meet a large spectrum of missions according to the current threats and to consider the characteristics of conflicts in the information age as well as the full potential of the geospatial technologies. This architecture has the role to translate a vision in processes, services and infrastructure. The aim of GSA is to provide knowledge for personnel implied in mission planning and execution by geospatial information and services and to maximize the utility of geospatial information for all users. This architecture has to allow combination of basic geospatial information with those related to the fight functions and then to be distributed where is it needed at the right moment to allow the mission success.

1. Overview of the current geospatial support in the Romanian Armed Forces

At strategical level, Military Topographic Directorate (MTD) is the traditional producer for maps and geospatial databases. MTD activity is 90% focused on realizing products according to NATO standards. The capacity to fulfill these standards is very limited. Thus, only the operational level can be supported with products covering national territory while for the tactical level only a fraction of the national territory is covered with updated NATO standard products. Moreover, the products for urban areas cannot be produced at all. The capability to do geospatial analyses is reduced and limited to participation at military exercises. However, this capability could support with geospatial analyses only one entity at

tactical or operational level during an operation. The complex analyses in the category of data fusion cannot be fulfilled.

At the operational level (Joint Forces Command) there is not a geospatial support capability. The geospatial requests are addressed to the MTD and these are limited to the standard products and customized maps for exercises. Thus, decision making doesn't take into account geospatial analyses or other specialized assistance.

At tactical level the geospatial support is limited to the analogical maps and digital products needed in C2 systems only for visualization. Also, there are not specialized entities able to generate products in support of decision making. However, there are some premises to improve this situation, as some organizations have included GEOINT capabilities but without employing specialized personnel qualified for such tasks.

In order to improve this situation, one solution would be to adopt a geospatial architecture as the one proposed in the following sections.

2. Factors that influence the geospatial support

There are two categories of factors: one that refers to the organizational environment and one that is related to the operational environment (fig. 1).

The organizational factors refer to the technologies that influence the information flow, as those from the geospatial, communication and C4ISR domains. Also, the collaboration with other organizations outside the military area influence the foundation geospatial information that describes the physical environment. Another influence is promoted by the adopted policies in Ministry of Defense and the leadership that decides on the acquisition of systems and capabilities. For instance, the existence of the geospatial support mobile capabilities for terrain analysis teams depend on the budgetary allocations which is not part of the GSA. In the same way, personnel policy at MoD level has a significant impact on the possibility to employ specialists with high level of expertise.

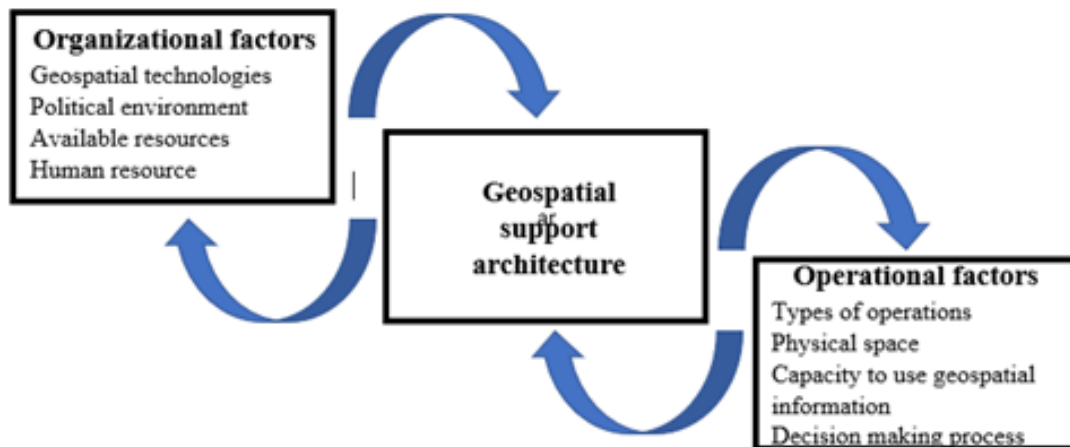


Figure no. 1: Environmental factors that influence the GSA (adaptation)¹

The most important influence outside the military area is the economy condition at national level because this determines the allocations for training, acquisitions or research and development. Also, the global policy is an important variable that influence decisions on

¹ James Richard, *Integrating the Army Geospatial Enterprise: Synchronizing Geospatial-Intelligence to the Dismounted Soldier*, Thesis for MSc in the field of engineering and management at Massachusetts Institute of Technology, USA, 2010.

national priorities regarding the defense expenses. These organizational factors could vary in time and this impacts the GSA functioning and the possibility to contribute to the missions' success.

The second category of environment factors that leverage GSA are the operational ones. These take into account the operations' nature and the terrain factors. These variables determine the decision makers' needs. For instance, the geospatial requirements for peacekeeping operations are different in comparison with the ones for disaster relief operations or counter-insurgency ones. As the defense analysts express an increasing uncertainty about the future operations, GSA has to be designed to be adaptable to the dynamic requirements. This requirement is challenging, especially because most geospatial information is time-consuming to be produced and considerable resources are needed.

3. Development of the Geospatial support architecture (GSA)

In order to setup the main aspects to be considered in the designing process of GSA, some analyses are needed. These refer to the stakeholder analysis, value identification for these categories as well as the end state defined by a performance level. Prioritization of the stakeholders helps to setup weights for value estimation. Then, the most important views are determined. To validate the architecture description, these views are modeled, and their interactions are defined. The views highlighted in Figure no. 2 represent aspects that interact each other. These views could be adapted depending on the application domain. The lines and arrows show the relations and influences between views. In order to understand the complex architectures, a description of these views is necessary. These eight views have been identified analyzing a variety of organizations during 6-7 years.

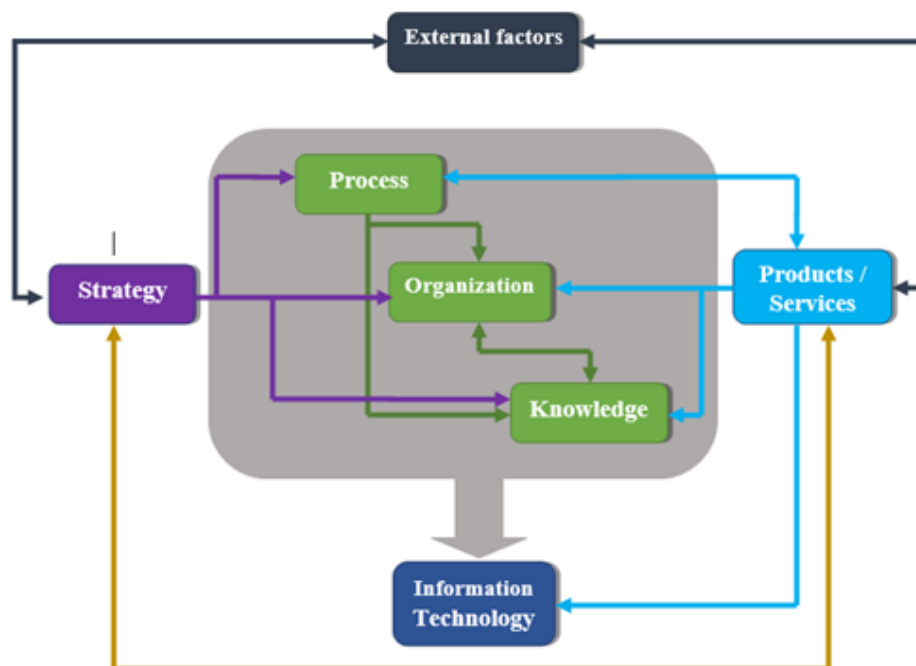


Figure no. 2: Holistic framework of an enterprise architecture²

² Donna Rhodes, Deborah Nightingale, *Architecting the system of systems enterprise: enabling constructs and methods from the field of engineering systems*, 3rd Annual IEEE International Systems Conference, Vancouver, 2009.

Each view is defined by structure, behavior, documentation, evaluation method and periodicity. These are shortly defined in table no. 1.

View	Description
Strategy	Goals, vision and direction of the enterprise, including business model and competitive environment.
External factors	External regulatory, political and social environments in which the enterprise operates.
Organization	Organizational structure as well as relationships, culture, behaviors and boundaries between individuals, teams and organizations.
Process	Core processes by which the enterprise creates value for its stakeholders.
Knowledge	Implicit and tacit knowledge, capabilities and intellectual property resident in the enterprise.
Information	Information needs of the enterprise.
Product	Products produced in the enterprise to be used by its stakeholders.
Services	Services of the enterprise, including services as a primary objective or in support of product.

Table no. 1: Description of the enterprise architecture's views³

4. Description of the geospatial support architecture

As shown earlier, describing the eight views represents a method to understand the value given by GSA.

4.1. Strategy view

Strategy view covers the aim, the vision and the direction of GSA. The primary beneficiary is the commander that decides the actions in the field followed by the intelligence analyst. In foreign armies there is an uncertainty about the right place for this support team between J2/G2 and J3/G3, sometimes both situations being adopted even for the same army. However, taking into account that the geospatial support is an information management discipline that is ruled by the intelligence cycle, the author considers that such capability should be used in J2/G2 compartment.

The vision is that any soldier in any location should be supported with any needed geospatial information at the right time to allow decision making and mission success. Therefore, geospatial support has to meet the following conditions:

- Exploitation geospatial sensors and data sources in a manner compatible with NNEC (NATO Network Enabled Capability);
- Requirements have to be fulfilled in time;
- Usage of formats that permits analysis and integration of geospatial information with other types of intelligence;
- Organization as a service oriented architecture.

The aim of GSA is to provide geospatial products and services that are precise, complete, coordinated, at the right time, in all operational environments, for all component commands (land, maritime, air, special operations, logistics) for all staff elements at tactical, operational and strategic levels in order to allow mission success.

³ *Ibidem.*

A unitary geospatial support is the base to implement the principle “operating off the same map” for all force components implied in a mission. For this reason, a special attention must be paid to synchronize the geospatial information both vertically (across the chain of command) and horizontally (entities in the same organization) taking into account the minimization of delays.

4.2. External factors view

Geospatial information is implied in support of command and control systems, weapon systems, ISR planning, functional services and other systems. Acquisition of such equipment variety could generate contradictions regarding data formats and standards. Consequently, a GSA strategy should imply policies and standards regarding data formats. Also, by policy, processes and responsibilities have to be specified to delineate how the requests are submitted, fulfilled and exploited.

Another external influence in adoption of policy and standards is related to the commercial solution providers. Thus, their availability to modify products and services should be evaluate in accordance with the possibility of the stakeholders to react to that changes. For instance, even though the newly adopted standards for geospatial databases could be implemented in data production, these could not be used in legacy weapon systems that don't support such standards. When these aspects are not synchronized it might happen that geospatial information become unused or used below the true potential.

4.3. Organizational view

Geospatial support at strategic level

At the strategic level it is needed to setup an organization to be responsible with implementation and maintenance of GSA in MoD and to represent MoD at national level as a leader in the area of geospatial information for defense purposes. Currently, this role can be fulfilled by the Military Topographic Directorate. Thus, this organization would coordinate the geospatial support for organizations which are part of the national security system. The responsibilities of this organization would cover the following areas:

- Regulation of geospatial domain in MoD;
- Personnel policy implementation consisting of appointing, education, certification of specialists working in GSA;
- Representation of MoD in geospatial matters in relation with other national defense organizations;
- Production of geospatial information;
- Production of geospatial databases related to human geography;
- Geospatial analysis;
- Fusion of geospatial information;
- Dissemination of geospatial information
- Education in the geospatial domain.

During operations, the organizational entity responsible with geospatial support at strategic level provides products related to terrain analysis, terrain visualization, customized thematic maps. Also, it augments the geospatial capabilities at operational and tactical level with geospatial mobile capabilities. These are able to collect, generate, manage and print geospatial information in theater.

Geospatial support at operational level

Activities related to geospatial support for joint operations aim to generate analytic products. These are developed continuously and could be executed independently or integrated as a part of another intelligence discipline that needs fusion, visualization or analysis of information based on spatial characteristics.

In the command structure of the Joint operations command - JOC, a geospatial support cell (GSC) has to be established. In order to provide tailored GSC organization according to the needs, the organization responsible with geospatial support at strategic level could enhance temporarily this structure with military or civilian specialists. Also, the same organization could provide, during crises, mobile teams to strengthen the JOC's geospatial capabilities as well as a permanent connectivity with the base station.

GSC coordinates all geospatial requirements in the operational area and the component commands that support the joint operations are responsible for geospatial requirements at theater level. GSC uses information from multiple sources to assess the environment, own and adversary forces. GSC supports not only processes like JIPOE (Joint Intelligence Preparation of the Operational Environment), but also the development of COP (Common Operational Picture), logistic support and targeting.

Geospatial support at tactical level

Geospatial support at tactical level has to be organized depending on the decision level. Thus, at battalion level the GSC activity has to be concentrated on information management, geospatial products customization, quality control and dissemination of geospatial information across the headquarter.

GSC has to include field data collection operators, image analysts and geospatial analysts. These have to fulfill the geospatial requests coordinated with GSC at higher and subordinated echelons and to allow access for all beneficiary. The responsibility to supervise the GSC activity lies to G-2/S-2 compartments.

At division level, the effort has to be concentrated on database management, mission planning and IPB (Intelligence Preparation of the Battlefield) processes. At brigade level, GSC activity has to be focused on current operations and geospatial database updating.

At tactical level, GSC provides terrain analysis and visualization to enhance situational awareness and decision making processes during planning, preparation, execution and evaluation.

4.4. Processes view

The geospatial information flow is represented in figure no. 3 as a cyclic process for each decision level as well as between decision levels. GSA organization as a geographic information system allows the execution of those stages of the flow at different force components in different geographic locations. Thus, data collection, data processing, information storage and display are available at individual level as well as at the level of diverse organizational entities.

4.5. Knowledge view

Because the geospatial domain is significantly influenced by different technologies, knowledge management must be considered. Knowledge management is a discipline that promotes an integrated approach for identification, collection, evaluation, obtaining and distribution of all components related to information in an organization⁴. These components refer to databases, documents, procedures, policies as well as people expertise and experience. An essential component of nowadays organizations is the ability to create knowledge and to solve problems⁵. For this reason, GSA has to implement concepts specific to organizations based on knowledge and learning, where tacit knowledge is transformed in explicit knowledge or transferred to individuals.

⁴ Bryant Duhon, *It's all in our heads*, Inform, vol. 12, nr.8, 1998, pp. 8-13.

⁵ Ikujiro Nonaka, Takeuchi Hirotoka, *The knowledge creating company*, Oxford University Press, New York, 1995.

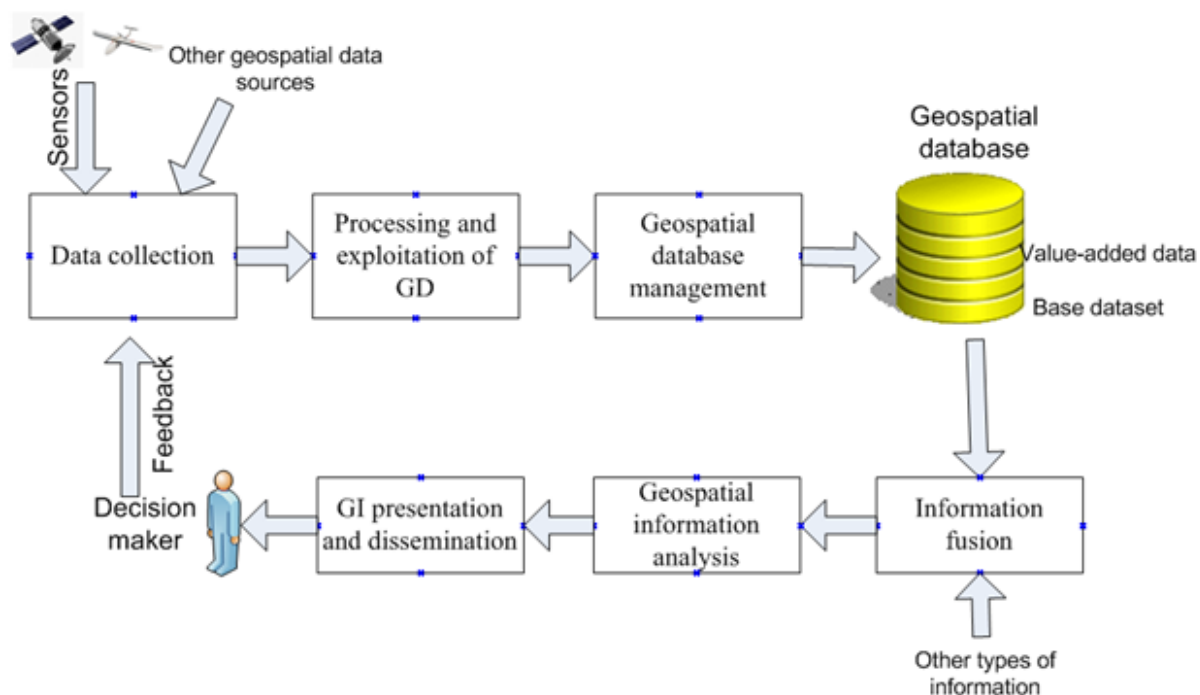


Figure no. 3: Geospatial information flow

4.6. Information view

In the geospatial flow presented in Figure no. 3, each step adds value to input data coming from sensors. Thus, a variety of geospatial products with different complexity are realized (Table no. 2).

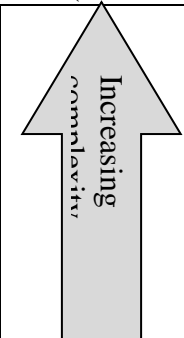
	Geospatial information type		Category
	Customized analytical products	Geospatial information fusion	3
	Terrain analysis for operations		
	Geospatial databases	Standard maps	1
	Ortho-rectified aerial/satellite imagery		
	Terrain altimetric data		
	Raw data from sensors		

Table no. 2: Classification of geospatial information by complexity

Beside the geospatial information shown, GSA relies on information technology to implement the processes of the intelligence cycle. IT systems are used to implement geographical information systems. The details of IT systems design and implementation are outside the aim of the current article, but this has to be considered when implementing the GSA.

4.7. Products and services view

The geospatial information at level 1 (see table no. 2) are produced by the organization responsible for geospatial support at strategic level (Military Topographic Directorate). These foundation datasets consist of the following geospatial data types:

- LIDAR data which describes the terrain elevation as well as the surface elevation with high accuracy (usually 1 or more points per square meter);

- Altimetric data in DTED (Digital Terrain Elevation Dataset) format obtained from contour lines on maps at scale 1:25.000;
- Aerial and satellite images at resolutions ranging between 30cm – 5m;
- Geospatial databases in NATO standards;
- Standard maps at different scales.

This information is available to all force categories as well as for intelligence community.

Regarding the geospatial products at levels 2 and 3 in the classification shown in table no. 2, the most used geospatial analysis at tactical level are related to the following products:

- Visibility studies;
- Cross country mobility for different vehicles in all weather conditions;
- Mobility corridors;
- Hydrologic analysis;
- Helicopter landing zones/drop zones;
- Cover and concealment;
- 3D virtual flights;
- Urban analysis.

Conclusion

In conclusion, in this study, principles available for enterprise architectures were identified and applied to define a geospatial support architecture for the Romanian armed forces. These principles refer to implementation steps as well as to the views that describe an enterprise architecture. The GSA intention is presented in the strategy view. Thus, geospatial information has to be a fundamental support in decision making, available at all levels during all mission stages, as geospatial web services. The implementation presented in the organizational view defines the organizational entities with roles and responsibilities at strategic, operational and tactical levels. Also, for the proposed geospatial support cells, manning, missions as well as other details that describe such capability are treated.

Another conclusion is that by the proposed architecture, essential requirements for information management are met. Thus, the information is synchronized horizontally and vertically in the command chain, the ISR assets are exploited and the information dissemination is realized in real-time using geospatial web services.

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CONSIDERATIONS ON THE MODERN FACE OF WAR

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Abstract: *The specific means of war is the armed struggle, which is destructive. By triggering a war, politics pursues its aims, but uses other means, the means of armed struggle. Armies are closely linked to technological developments. They are the first beneficiaries of technical and scientific progress. Contemporary military conflicts have highlighted new orientations and concepts of military action, characterized by complexity, mobility, dynamism, the use of high technology and almost totally professional forces, integrated actions of all categories of forces and arms genres. The space for the armed struggle in its terrestrial, aerial, maritime and cosmic dimension tends to become increasingly integrated, completely cybernetic, with increasing tendencies to expand into the electromagnetic environment based on spectacular developments in the technical-scientific field.*

Keywords: *war, armed struggle, technology, modern forces.*

Introduction. Concept of war. Origin, causes and essence of war

It is hard to find in politics a phenomenon that exerts a stronger and more stable fascination on social sciences than war. From the beginning of humanity until present, many writings that reveal the origins and causes of war, but it is only after the World War II that we can talk about more systematic studies of the war phenomenon.

The war appears as an act of violence intended to compel an opponent to obey the will of the victorious army. Due to the mutual action of the forces, its natural tendency is to rise to extreme violence, where its supreme law is the destruction of the adversary.

The specific means of war is the armed struggle, which is destructive. By triggering a war, politics pursues its aims, using other means, specific to the armed struggle. By the specifics of the used means, the armed struggle is therefore of a different nature than the political action. Subordinating the armed struggle to the political goal is not easy to accomplish; this complicated process does not exclude the possibility that the use of violent means during the armed struggle may exceed the pre-established policy framework and no longer serve the agreed political goals.

History proves that, most of the times, the majority of the population participate passively in wars without being responsible for their start. Paradoxically, the human is capable of killing other people without feeling a personal hostility against them. Moreover, inventing more and more sophisticated weapons, which kill adversaries at increasing distances even when their destructive force becomes catastrophic, depriving the individual of the direct experience of killing his victim, more and more removes his inhibitory mechanisms. The destruction, the annihilation of the enemy becomes a "technical" problem, a component of "game rules", condition for "winning". From this point of view the threats have grown enormously, bringing mankind to an extremely dangerous point.

What is war? From Sun Tzi, we learn that "*War is a matter of vital importance for the*

state, the domain of life and death, the path to survival or destruction"¹.

In contemporary approaches, other concepts of defining the war appeared. Polish sociologist Jerzy Wiatr addresses the definition of war as a special form of social conflict, as a state of the whole society under the conditions of an armed conflict: "*War is a state of society in which an external or internal conflict resulting from politics is solved by violent means*"².

Interpretation of the essence of war cannot be limited to the theses and the appreciation of some theorists in the nineteenth or twentieth century. Contemporary age has been confronted with new phenomena that bring about essential changes in the development of society, also modifying the military domain, so that the classic definition of war needs to be developed. Defining war as a "continuation of politics by other means" cannot include the content of such a complex phenomenon. Other features should be considered to define the phenomenon of war in the whole of social life, by emphasizing the specific notes and its implications in people's lives, to distinguish it from other forms of manifestation of armed violence (clashes between different groups, terrorist actions etc.) A more comprehensive definition should include elements about the type of social relationships whose expression is war, about the parties not engaged in military conflicts, about the destructive character of the armed struggle. In the past, it was appreciated that the destruction caused by war would be an outward manifestation of it, a phenomenal aspect but not an essential one. Today things are totally different. The existence of weapons of mass destruction, their continuous development, along with the continuous development of powerful conventional means of fighting, the danger that any local war may turn into a general war, determines that in the definition of war to be included, as an important feature, its great destructive power, resulting in the disastrous consequences for peoples of the wars between states in the contemporary era.

1. The features of the contemporary military phenomenon

Regardless of the characteristics that modern war develops, the military phenomenon has the same general tendencies, which highlight the following aspects³:

- Various factors (political, economic, moral, religious etc.) depending on the situation and circumstances, are opposing to the rise of the armed struggle to extreme violence and therefore opposing to the natural tendencies of the absolute war, as seen by Clausewitz;
- The subordination of the military phenomenon to the political purpose through violence, the raw force, as a main element of power, was, is and will be a tool for the promotion and imposition of political will;
- The military phenomenon is mainly manifested by the armed fight which is a specific type of social action aimed at disorganizing the enemy's system of actions, capturing or destroying it;
- The military phenomenon tends to form specific structures that have the capacity to manifest as an integrating phenomenon to subordinate all the natural, material and human resources of the social actions and the institutions corresponding to them, to impose a certain military order in the social system. The military order determines that the relations between the main centers of power to be competitive and, because of their global character, the adversity is transmitted or manifested by other many subjects of international life at levels and in the most diverse areas.
- As a manifestation of paroxysmal violence, the military phenomenon is established as a "*major constituent or even as a unique element of security*"⁴, of the balance within a social

¹ Sun Tzi, *Arta razboiului*, Military Publishing House, Bucharesti, 1976, p. 31.

² Jerzy I. Wright, *A Study of War*, Chicago, 1943, p. 6.

³ Dorin Eparu, *Fundamente ale științei militare. Studii strategice, Curs*, „Carol I” National Defence University, Bucharest, 2013, pp. 28-30.

system of a state or even global. By its presence and weight in the balance of power, the military component leads to changes in the security balance, so that if state security depends ultimately on military power, insecurity increases with its development.

The end of the 20th century and the beginning of the 21st century show that insecurity syndrome moves from the exclusive military area to other areas as the economic one. Resources – raw materials, primary sources of energy, food, water etc. – become essential in national security strategies, but especially in global ones. The military phenomenon will remain a potential and real vector of power in delivering national and global security strategies.

2. The face of the modern war

The technologies have been, are, and will always be in the hottest core of the armed confrontation. To some extent, they are the ones that revolutionize military art.

Armies are closely linked to technological developments. They are the first beneficiaries of technical and scientific progress. Contemporary military conflicts have highlighted new orientations and concepts of military action, characterized by complexity, mobility, dynamism, the use of high technology and almost totally professional forces, integrated actions of all categories of forces and arms genres. The space of the armed struggle, its terrestrial, aerial, maritime and cosmic dimension, tends to become more integrated, fully cybernetic, with increasing tendencies to expand into the electromagnetic environment based on spectacular developments in the technical-scientific field.

In my opinion, military action is determined by the gain of supremacy in other areas of the modern battlefield, including the informational, psychological and special actions of professional forces. In this way, combat actions become accurate and effective, are carried with small losses but with major effects.

A new face of the modern battlefield is expected, this will be characterized by the high technology used; the magnitude of special psychological warfare; simulation and diversion actions; diversified actions of Special Forces.

There is also the possibility that the forces engaged in conflict may be confronted not only with hostile actions of paramilitary or terrorist groups, executed simultaneously or successively, but also with the possibility of operating in the same time and space with multinational forces for peacekeeping. The modern military battle will have an increasingly integrative aspect, the battlefield of the future being characterized by new dimensions and features found in discontinuous fronts, outbreaks of different interventions with expansion to vertical rapidity in the preparation and execution of maneuvers, simultaneous targeting of troops and targets, both at contact and in depth.

The spectacular developments in science and technology have a special effect on the military domain, especially in the current geopolitical and geostrategic context, particularly fluid, requiring reorientation, rethinking and reorganization in the modern military action system.

The content of the modern combat will have a new face, determined in particular by the military products of the informational age. The change in the economy brings with it a parallel evolution in the nature of belligerence.

Modern armed forces will deploy and employ, in a short period, significant number of troops on military theaters of operations situated at appreciable distances from their national territory or from the current deployment areas. The taskforce groups will have a joint

⁴ Traian Grozea, *Implicațiile fenomenului militar în viața internațională*, Politica Publishing House, Bucharest, 1987, p. 15.

character, ensuring a superior quality of the training for the combat of the units both individually and collectively of the units and battle groups.

Modern armies capable to engage in a major conflict will take advantage of some attributes that will create a global superiority over their opponents:

- The ability to project military power globally (by strategic deployment anywhere in the world);
- Superiority in the collection, processing and exploitation of information;
- The ability to develop an appropriate doctrine at strategic level, both joint and combined armed forces;
- The ability to seize the initiative and achieve success in integrated operations, using modern operational concepts;
- Robust forces equipped with modern weapon systems with high fire power, providing them a major advantage over opponents.

The armed forces services can carry out specific missions within integrated strategic actions. The Air Force performs missions in gaining airspace control, air support for land troops and the Navy, destroying infrastructure and interdicting the logistics flow of the opponent, banning its efforts to use reserves at all echelons. Land forces block the offensive of enemy forces, destroy them by the effects of direct and indirect fire, and execute counterstrikes in order to conquer the important and dominant objectives of the enemy. The Navy takes control of key ports and maritime directions of operations launches maritime assault operations protecting the flanks of land forces attack groups and contributes to the air defense of troops in operations areas. This combination of missions, carried out synchronously and at a high tempo, is the basis for success in operations.

In order to cope with the requirements set out above, the military force participating in operations specific to a major military conflict must be robust. The more ambitious and more complex are the strategic and operative objectives imposed to the armed forces, the greater is combat power of military forces assigned to the military operation. The robustness of military forces materializes in four areas: quantity; training for combat and operability; upgraded equipment and support.

Today, modern armed forces are tailored on the principle of diversity. They have enough fighting power to accomplish almost any mission or combination of missions. They can carry out different types of campaigns, an indispensable condition for nations aspiring to be regional or global competitors.

Combat capability is the result of the convergent action of several factors: high-quality military personnel; a high degree of staffing with military personnel from the active service; an extensive and intensive combat training for troops; weapon systems at high operational level; effective operational procedures; the ability to act at a fast pace.

The process of modernizing the armed forces requires the use of highly technical weapon systems and ammunition to match or overtake competitors in the following key areas: tanks require high levels of fire power, mobility, reliability and survivability; combat planes need an increased range of action, great payload, and high maneuverability; combat ships will have to be able to survive in a hostile environment, cope independently with a wide range of threats, and use their high impact efficacy at great distances.

Logistical support is seen in modern armies as a determining factor in establishing the combat capability of military structures at strategic level.

The logistical capacity of the armed forces can be the decisive factor in achieving success even in short wars - possibly lasting a few weeks - as the major wars in the military action theater are likely to be. For example, those air forces that can provide a battle rate for their own of two aircraft sorties/day for a long period of time will have a clear advantage over the opponent's air forces, which can only provide a rate of use of one exit per day. Similarly,

the effectiveness of the armed forces is heavily influenced by the ability to maintain the supply flow of fuel-lubricants, ammunition, evacuation, repair and replacement of armor, vehicles and tractors, maintaining communications viability, and replacing actual losses to troops. Armed forces with effective support capacity in these areas will find themselves in an advantageous situation compared to those with a lower capacity.

Military force design capability is determined by the existence of military structures with high and very high training levels, generally of a professional type, requiring a very short training time to carry out unforeseen tasks.

In addition to the existence of such distinct specialized structures, it is necessary to have adequate logistical capacity for airborne transport and, possibly, by naval means of both the forces intended to be projected and for logistical support and, possibly, the introduction of reinforcements, if necessary, in support of them. It is appreciated that modern armies must be able to conduct operations of low intensity conflicts in any kind of strategic environment, including where opponents use asymmetric means such as weapons of mass destruction. Also, the forces involved in this type of operations on other military action theaters must be able to be withdrawn, reconstituted or regenerated and then displaced and deployed to participate in a major conflict in a theater of operations.

The participation of armed forces in actions and operations specific to low intensity conflicts is made on the basis of plans drawn up in time of peace to solve unforeseen situations. Because operations in the context of low intensity conflicts do not always require participation with very large military strengths and do not always serve to accomplish or preserve the vital interests of the states that initiate them, they require a sustained effort from the governments of those states to mobilize the support of public opinion and political forces. Sometimes even the concern about how public opinion and the media will accept possible human losses can create real psychoses that far outweigh the normal concern of the commanders from all echelons for the proper protection of subordinate forces.

An important role in operations other than war (engaging in military action in peacetime) is held by military actions and operations in support of civilian authorities.

It can be said that such military structures are possible and could be compiled at least in three ways: by engaging with military personnel who have basic national training, after a minimum of international training, in international armed forces; by direct insertion in such forces for a certain period of a contingent of soldiers or young people who will be trained in such structures, by participating all countries, according to a chart, with subunits, units, large units and resources, to such structures.

Each national army could have in its structure what would be called the international component.

Military relations follow the general line of political and economic relations between states, so if there is economic and political integration, there is certainly a military one. But this is not absolute, it is not definitive, but as any action of this kind depends on many factors. However, the action of economic, financial, political integration, as well as the realization of integrated military structures, belongs to the world evolution of the 21st century and seems to have opened a new era in military art.

The experience of the wars shows that a new sphere of human activity turns into an armed combat area, where there are at least three basic premises: the first - the state of science and technology, the economy and the social conditions ensure the creation and the preparation of forces and means to conquer a new area; the second - the new area ensures the efficient fulfillment of the existing missions and of the qualitatively new ones of the armed conflict; the third - the existence of sufficient forces and means to carry out independent strategic missions. All these requirements are currently only for the terrestrial area, as such, the area of armed conflict is now the land on which are disposed and operate not only land troops but

also an important part of the air forces, and also a part of the maritime forces capabilities capable of carrying out independent operations.

Multiplication, diversification of security risks and threats against security, social communities and their widespread dissemination underlie the political decision to resort to armed violence of harsh tests, caused in particular by differences in political culture in assuming responsibilities and consequences. Rules of engagement, courses and intensity of action, even some “strictly technical” moments (planning, selecting targets, choosing moments, and using forces) will have a strong political burden.

In the current security context, planners of military action have to take into account elements that until recently were of little relevance or were ignored for reasons of efficiency:

- Eliminating excessive or apparently unnecessary losses in the opponent's lines, even at the risk of failing to achieve the goal quickly;
- Protection of their own troops;
- Protecting the opponent's (economic, social, cultural) objectives;
- Rapid change of course of action, depending on the reactions of the internal and external public opinion;
- Highlighting, monitoring, and planning actions in places and moments when the opponent could react through challenges that would affect the image of their own troops.

Military action becomes an organized and planned area where commanders and their headquarters will be forced to consider some aspects such as:

- Identifying and analyzing the adversary's “weight centers”, not only for reasons related to military art, but also to shape the behavior and intensity of armed violence according to their strict economic realities;
- Identifying and intervening in the opponent's financial circuits
- planning the use of weaponry and fighting equipment in service and warehousing according to operational requirements, performance, but also age, warranty and expiration terms, warehouse loading, release of logistics spaces and capacities, future budgets;
- Estimating post-conflict economic developments.

Military actions in which armed violence is exaggerated may lead to the loss of global (national) support, even if political-military reasons justify it. Also, the loss in personnel of their own troops, the temporary humiliating situations can raise questions about the legitimacy of the action and the war as a whole, but also the strengthening of the fighting spirit or fanaticism of the opponent. That is why, not always the course of actions that lead to the rapid achievement of the purpose of military action can be adopted without risk. The image forces military action to reconsider the efficiency criteria.

Conclusion

Maintaining the security state of society in the present security context, and the evolution and diversification of risks and threats to security as a whole, led to the emergence of new concepts of use of the armed forces in response to the evolution of security risks and threats, increasingly diverse, complex, sometimes difficult to predict and counteract.

The characteristics of the modern war still preserve the principles of the classic war, but adapt to the new challenges through the technology of the armed forces, the accurate preparation of the battlefield, which is sometimes unclearly defined and complex, to achieve the political goals imposed.

The unfolding of modern war as the last act of imposing political power brings new approaches to the military phenomenon and the military action, but it does not exclude the violent and destructive phenomenon of the war, we can say that the evolution in the technological, informational field can make the armed force used punctually, even with

surgical accuracy, but it cannot limit the collateral losses of human and material lives.

Every powerful state, alliance or coalition develops a modern, robust and operationalized military force, ready to respond to all the challenges and threats directed on them; these states and organizations are constantly investing and will invest in the modernization of the armed forces according to economic development and the strategic interests they have and want to achieve. This phenomenon is visible and increasingly publicized by each international, regional or local power center in order to impose its power in achieving political and economic goals.

By any means the development of the modern warfare is closely linked to the development of society as a whole, a development that differs from one society to another, so there are some very developed and less developed societies that lead to the creation of powerful power poles which influence the less developed states and determines the necessity of their adherence to those alliances that are created and created around these power poles, fact that causes all state and non-state actors to actively participate in the development of the power of these alliances by modernizing their own armies, standardize and equip all members of these alliances with modern technology and weaponry to cope with the global and regional security challenges that lie ahead.

Modern warfare is complex and difficult to define from the perspective of the means used due to the continuous evolution of the technology that develops and is used in the four environments (terrestrial, air, maritime and, last but not least, the cosmic). Any emergence of a modern weapon system with potential of action at large or small distances in the four action environments with destructive effects causes each power pole to develop weapon systems that counteract the one developed by one from the other power poles and not only to create a better system that cannot be countered by the adversary, can put into discussion a global arms race which must be limited by international bodies through diplomatic involvement and the application of diplomatic and economic sanctions.

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MULTIDIMENSIONAL JOB ANALYSIS IN THE MILITARY ORGANIZATIONS

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Abstract: *The officers' advancement in the military career is represented by the translation from execution posts to command posts. Commitment to a command post involves an exponential increase of the task diversity and analyses information flow. Also there's a need for continuous skills development in leadership and resource managing. Under these circumstances, the occupied command post involves a mix of various challenges in managing simultaneously and synchronously human, material, and time resources available within the organization.*

This paper proposes a classification used for analyzing the management positions within the military organizations, thus obtaining a way of expressing their complexity and their value, as well as identifying the coordinates needed to be achieved by the military organizations managers from the point of view of different skills or managerial types imposed by the specifics of the occupied post.

Keywords: *job analysis, key competencies and abilities, job description.*

Introduction

This paper is trying to introduce and promote the opportunity offered by job analysis (JA) to organizations (military ones included) in the context of a permanently changing workplace and organizational structures, increased task diversity and complexity, information assaults, rapid technological changes and so on.

Job analysis is the process of examining a job. Job analysis is a set of procedures designed to identify, collect and analyze data about the content of a post from the perspective of the activities and requirements required to perform the duties of that post¹. Job analysis provides organizations with the information needed to identify the most suitable employees/candidates for existing posts. Singh goes further and believes that job analysis also collects information that previously existed about post². Through this analysis are determined the most important tasks of the job, how they can be fulfilled, and what are the most important personal knowledge, skills and abilities (KSA – knowledge, skills, abilities) required to successfully perform job duties.

¹ J. I. Sanchez, E. L. Levine, „Accuracy or consequential validity: which is the better standard for job analysis data?” *Journal of Organizational Behavior*, Volume 21, November 1, 2000, pp. 809-818.

² P. Singh, „Job analysis for a changing workplace”. *Human Resource Management Review*, Volume 18 (2), June 1, 2008, pp. 87-99

The result/product of JA can be a job description and/or a job specification. These deliverables can be used for different aspects of human resource management (HRM), like *selection and staffing, training and development, performance appraisal, compensation and benefits, job description and job design*.

Job analysis is based on the assumption that jobs remain constant over time, so current approaches are suitable for use in well-defined jobs based on clear descriptions and specifications³. At the opposite side, there are managerial / management posts that can involve very diverse tasks and high variability in working and environmental conditions. For these types of positions, the description of the positions is difficult and often managers/officers with leadership positions manage conflicting, ambiguous or risky situations⁴. The same idea is exposed by May: *"The reality is, jobs can change rapidly and organizations need maximum flexibility. The more job change, the less value is to gathering data that will need to be collected again in the near future. The shelf-life of job analysis results is only long as the duration of the current job configuration. Thus, traditional job analysis practices are found lacking in light of changes in the nature of work, such as decreased specialization and shifting or shared work assignments"*⁵.

The current work is divided into 5 parts. After the introduction, the main job analysis methods are reviewed, the third part highlights the existing limitations that makes difficult classical job analysis to apply to contemporary characteristics of the organizations and implicitly to the military organizations, the fourth part introduces the strategic job analysis (SJA) as a possible solution to the above-mentioned constraints. The conclusions summarize the main arguments raised during the work.

1. Overview of the current job analysis approaches

Job analysis is the systematic process of determining skills, duties, and knowledge required for performing jobs in an organization. It is an essential and pervasive human resource technique. In today's rapidly changing work environment, the need for a sound job analysis system is extremely critical⁶. A more explicit definition is given by Chang & Kleiner which states that "job analysis is a systematic process of obtaining valid job information to aid management in decision making"⁷. Where "systematic process" means the job analysis is carefully planned to meet specific objectives. A systematic process is implemented in such a manner that it ensures employee cooperation and utilizes job analysis methods (interviews, direct observations, personal logs, questionnaires) that are acceptable within the human resource management field. The validity of the information is given by the accuracy of the method used.

³ D. Torrington, L. MacKay, L. Hall, "The changing nature of personnel management", *Employee Relations*, 1985, pp. 10-62.

⁴ Y. Baruch, R. Lessem, „Job analysis: can it still be applied? Indications for various organizational levels”, *The International Journal of Career Management*, volume 7, 1995, pp. 3-9.

⁵ K. May, "Work in the 21st century: Implications for job analysis", *The Industrial Organizational Psychologist*, 1996, pp. 98-100.

⁶ N. Mondy, *Human resource management*, Prentice Hall, New Jersey, 2002.

⁷ W. Chang, B. H. Kleiner, "How to conduct job analysis effectively", *Management Research News*, Volume 25 (3), March 1, 2002, pp. 73-81.

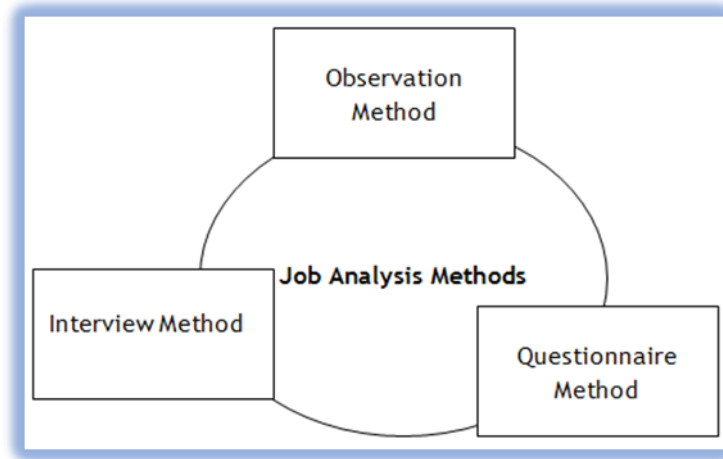


Figure no.1: Most common job analysis methods⁸

Finally, job analysis results are used for decision making of compensation and job evaluation/ classification. Furthermore, Singh (2008) is quoting Schneider & Konz (1989) and states that job analysis is focused on the collection of work-related information for the job as it currently exists and/or has existed in the past⁹.

Initial forms of job analysis are tracked back in time of Socrates in the fifth century when he tried to define the link between the work done and who did it. A larger scale of work regarding job analysis was obtained by Diderot in 1747. He investigated and analyzed the content of jobs in trades, arts and crafts¹⁰. The term *job analysis* emerged in the managerial literature at the beginning of the 20th century. In 1916, Frederick Taylor referred to job analysis as the first of the four principles of scientific management¹¹. Industrial engineering also had an important impact on job analysis because of the work of Frank and Lilian Gilbreth in the early 20th century. In order to increase productivity, they developed methods to study and examine work motions and worker behavior during job activity.

In the last decades, job analysis grown considerably in importance. It became an important part of the human resource management and serves as a guideline and reference for multiple human resource activities like *selection and staffing*^{12,13}, *training and development*¹⁴, *performance appraisal*¹⁵, *compensation and benefits*¹⁶, *job description and job design*¹⁷.

⁸ *Management study guide* available at: www.managementstudyguide.com, accessed on September 30, 2018.

⁹ B. Schneider, A. M. Konz, "Strategic Job Analysis", *Human Resource Management*, volume no. 28 (1), March 1, 1989, pp. 51-63.

¹⁰ E. Primoff, S. Fine, *A history of job analysis*, John Wiley and Sons, New York, 1988.

¹¹ R. Ash, *Job analysis in the world of work*, John Wiley and Sons, New York, 1988.

¹² M. Jenkins, R. Griffith "Using personality constructs to predict performance: Narrow or broad bandwidth", *Journal of Business and Psychology*, 2004, pp. 225-269.

¹³ S. A. Carless "Graduate recruitment and selection in Australia", *International Journal of Selection and Assessment*, 2007, pp. 153-166.

¹⁴ W. Wooten, "Using knowledge, skill, and ability (KSA) data to identify career pathing opportunities; An application of job analysis to internal manpowe training", *Public Personnel Management*, volume no.22(4), 1993, pp. 551-563.

¹⁵ G. Latham, L. Fry, *Measuring and appraising employee performance*, volume 1, John Wiley and Sons, New York, 1988.

¹⁶ T. Taber, T. Peters, "Assessing the completeness of a job analysis procedure", *Journal of Organizational Behaviour*, volume no. 12, 1991, pp. 581-593.

¹⁷ L. J. Konczak, "Using individual assessments in the workplace to enhance competitiveness: Lessons from four excellent companies", *Human Resource Management*, Volume 29 (2), 2007, pp. 145-166.

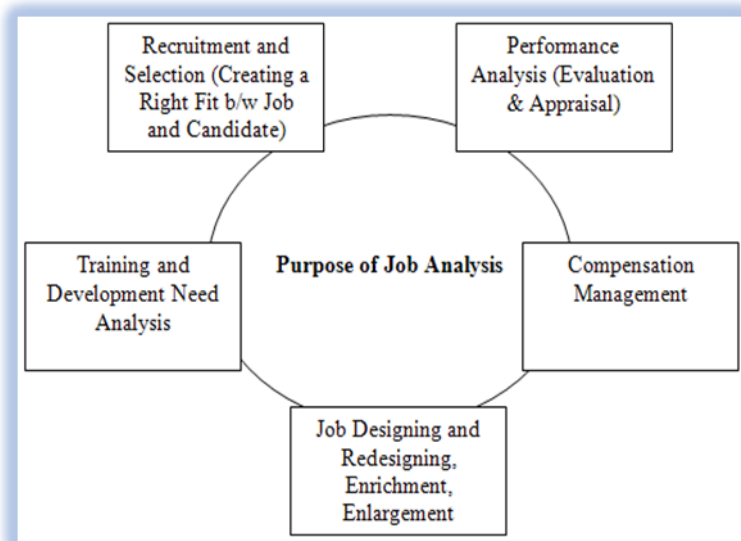


Figure no. 2: Purpose of Job Analysis¹⁸

However, moving to the upper management hierarchy, traditional definitions given by job analysis for the managerial jobs do not properly reflect job characteristics, attributions, context and its value as a whole¹⁹. Under these circumstances the value added by JA to managerial jobs/command posts will be lower compared with the execution jobs.

2. Limitations of the classical job analysis applicability

The starting concept of job analysis is that of the post, which, according to Armstrong “encompasses a complex of tasks that one person performs to accomplish a goal, and can be seen as a unit in an organizational structure that remains unchanged regardless of who occupies that post. In that sense, the post is a fixed entity, a component piece that can be “projected” like any other piece of a machine”²⁰.

Schneider & Konz note that “... the implicit assumption has been the specification of the tasks to be performed, and the knowledge, skills and abilities(KSA) required for job performance are for a job as it currently exists, and/or has existed in the past. This assumption implies that the job is static...”²¹ and furthermore, one of the classical JA supposition is that incumbents performing related tasks can literally be observed or others ways of collecting data can be used, such surveys or interviews.

Singh emphasize that traditional job analysis approaches and methods were significantly influenced by the work of Fredrick Taylor²². Jobs were broken down to its components and assigned to multiple workers. In this system, a worker was responsible for a specific part of the final product and was not encouraged to cross boundaries²³. Another

¹⁸ *Management study guide*, available online at: www.managementstudyguide.com, accessed on September 30, 2018.

¹⁹ H. Mintzberg, "The manager's job: folklore and fact", *Harvard Business Review*, volume 68, 1990, pp. 163-176.

²⁰ M. Armstrong, *Managementul Resurselor Umane*, Codecs, București, 2003.

²¹ B. Schneider, A. M. Konz, „Strategic Job Analysis” *Human Resource Management*, volume no. 28 (1), March 1, 1989, pp. 51-63.

²² P. Singh, „Job analysis for a changing workplace”, *Human Resource Management Review*, volume no. 18 (2), - June 1, 2008, pp. 87-99.

²³ S. Young, "A framework for successful adoption and performance of Japanese manufacturing practices", *U.S. Academy of Management Review*, 1992, pp. 677-700.

paradigm is stated by Sanchez, "...jobs were seen as encapsulated entities with clear-cut boundaries. Observation of employees during the short cycle of their work routine was often sufficient to obtain an accurate picture of the job"²⁴. Essentially, job analysis was focused on the job, rather than inter-job activity and team-based work. The increasing use of teams in organizations further questions the utility of traditional job analysis.

Another variable ignored by traditional JA is the internal organization business environment, characterized by worker flexibility, rapidly changing jobs and nature of work. The internal organization environment may consist in rotating employees through a number of positions for temporal replacements or professional growth, tasks which require ad hoc or long term team work. Same idea is emphasized by Brannick and Levine: "Team members are expected, over time to learn multiple tasks and to fill in for others when necessary"²⁵. For all the situations within the organization, employees must therefore be adaptable, flexible and multi-skilled. An immediate outcome of the organization flexibility is blurring or even erasing job boundaries²⁶.

3. Enhancing job analysis for a changing organization

3.1. Current approaches for SJA

In order to cope with all the present challenges, organizations need a proactive attitude towards job analysis²⁷. Similarly, Hammer and Barbera argue that "a strategic job analysis must be conducted prior to implementing alternative work schedules"²⁸. Although there is an obvious need for a strategic approach to job analysis, there are few theoretical proposals for a SJA framework. One of these is proposed by Schneider & Konz, in what they define a "*multi-method analysis*" procedure. Their eight step approach consists in²⁹:

1. Collect information on the current job;
2. Specify job tasks and build task clusters;
3. Develop and administer task surveys;
4. Conduct statistical analysis of task surveys responses;
5. Conduct the knowledge, skills and abilities (KSA) process;
6. Develop and administer the KSA surveys;
7. Gather information about the future;
8. Revise tasks and/or task clusters and KSA in the light of future changes.

One of the main ideas behind Schneider & Konz (1989) method is the evaluation of the future job changes. This evaluation is done by the so called subject matter experts (SME) which includes job incumbents, supervisors, managers and job analysts.

Keeping the same overall principle of prediction and forecasting future job changes and emerging organization challenges, Sanchez (1994) notes that traditional job analysis (TJA) is centered on the principles of the Taylor's scientific management approach which is

²⁴ J. Sanchez, "From documentation to innovation: Reshaping job analysis to meet emerging business needs", *Human Resource Management Review*, 1994, pp. 54-62.

²⁵ M. T. Brannick, E. L. Levine, "Job analysis, Methods, Research, and Applications for Human Resource Management in the New Millennium", *Sage Publications Inc.*, California, 2002.

²⁶ J. Sanchez, "From documentation to innovation: Reshaping job analysis to meet emerging business needs", *Human Resource Management Review*, 1994, pp. 54-62.

²⁷ C.M.Siddique, "Job analysis: strategic human resource practice", *International Journal of Human Resource Management*, 2004, pp. 219-244.

²⁸ L. B. Hammer, K. M. Barbera "Toward an integration of alternative work", *Human Resource Planning*, 1997, pp. 28-36.

²⁹ B. Schneider, A. M. Konz, "Strategic Job Analysis", *Human Resource Management*, volume no. 28 (1), March 1, 1989, pp. 51-63.

becoming unsuited to the current organization's needs. Using also a SME, he propose also a SJA method based on six step approach:

1. develop scenarios to facilitate the process of evaluating future KSA demands;
2. Forecast emerging critical occupation, listing KSA requirements by level and function;
3. Ask SMEs to predict potential technological and organizational changes;
4. Revise current KSA requirements in light of future changes;
5. Ask incumbents to rate their respective task inventories on scales measuring the extent to which successful completion of the task requires cooperation with others (team-work);
6. Identify key organizational and external relationships necessary to carry responsibilities and consequent strategy-related KSAs (e.g. openness to innovation, personal influence etc.).

As a guideline for human resources management (HRM) practices, Snow & Snell (1993) in an essay on staffing present three conceptual model that should characterize the staffing process. *Model 1*, using traditional job analysis, seeks to match individuals to specific well-defined jobs and ignores the company's strategy. *Model 2* views staffing as part of the overall strategic implementation process and is concerned with broadly defined jobs, as well as linkages between jobs. *Model 3* suggests that the recruitment, assessment and selection of high-caliber individuals should be the foundation of organization strategy.

Singh (2008) details that Model 2 supplements traditional job analysis with the company's relationship with the environment. Its effectiveness is defined by the organization's accomplishment of its strategic goals rather than just the person-job match. Model 3 assumes shorter business cycles and rapid technological advances. In such an environment the organization needs to create a broad skill base for value creation which aids the organization to deal with future unpredictability. As a general conclusion strategic job analysis, incorporates general or broad traits of the job incumbent.

Baruch & Lessem (1995) introduce the spectral management theory based on the spectral management type inventory (SMTI) method. SMTI method is based on three personal characteristics: cognitive (C), affective (A) and (B) behavioral. Sometimes a component is dominant and is represented by an upper case letter A, B or C. With these three characteristics an eight-category model emerges:

(1) Innovative manager – CAB: truly innovative are total originals, able to create something out of seemingly nothing. They are propelled forward by an inner compulsion, which is projected on to others by a powerful and visually expressive imagination. Such individuals are inventors and visionaries.

(2) Development manager – Cab: developmental managers have a balancing role, more akin to that of enabler rather than fixer that is essentially developmental in nature. For the truly developmental manager is able to recognize and harness the forces of diversity – in people or products, in markets or environments – where other might either supress or counteract them. Cooperation and interdependence is second nature to these managers.

(3) Analytical manager – CaB: the analytical manager is the archetypal executive. He or she fits comfortably into "role" or functionally based organizations where bureaucracy, in either its negative or positive sense, prevails. Impersonal, objective and honest in their dealings such managers prefer certainty to uncertainty and well-laid plans to devious manoeuvres. They are a force of law and order in their organizations and progress through the managerial hierarchy along conventional promotional lines.

(4) Enterprising manager – cAB: enterprising managers exploit new markets, recognize and grasp new business, opportunities and generally enjoy the rough and tumble of business life. They respond immediately to a challenge, especially if it involves some personal

and financial risk. They can be ruthless and unscrupulous but also fun loving, larger than life characters.

(5) Manager of change – Cab: such a manager of change is characteristically intellectual rather than primarily emotional or practical. They need to work in a mentally stimulating environment and will seek professional advancement rather than promotion, necessarily, within a particular organization. As a result they are often job hoppers for the sake of professional stimulus rather than, at least primarily, money or status.

(6) People manager – cAb: people managers, unlike the more detached “personnel manager”, are naturally gregarious, sociable and warm. They characteristically emerge from the salesforce or from the shop floor, rather than through the graduate management ranks. In cultures where such a people orientation is a prerequisite for advancement, apprenticeship schemes abound.

(7) Action manager – caB: action management is at a premium in very fast moving industries, where the expression “work hard, play hard” has become commonplace. In a production or distribution context, where action speak louder than words, such a management orientation is often called for. The ability to act fast, and to enact situations, ca be at a premium.

(8) Adoptive manager – cab: the last type manager is virtually non-existent in Western Europe and North America. For this person has such humility and faith in the company or creed, that he or she has minimal individual identity. The adopter-manager immerse him or herself in the surrounding group and culture completely. Consequently this manager is able to carry out required tasks with a degree of persistence and precision, typified by Eastern cultures.

The re-ability and validity of the SMTI method was tested in a comprehensive study (Baruch & Lessem, 1994).

The managerial styles are in correlation with the broad skill or traits base proposed by Schneider & Konz (1989), Sanchez (1994) and Singh (2008):

- ✓ Similar starting frameworks: no clear boundaries and job description for high level management jobs;
- ✓ SMEs are used to define job traits and challenges;
- ✓ The need to adapt to a rapid changing environment.

3.2. A possible implementation of SJA for the military jobs

As discussed in chapter 3.1., managerial styles or personal traits can be applied for military officers which occupy different execution and command posts. One of the advantages of the military career for officers is that there is a continuous translation between execution posts to command posts within the same military organization or between different hierarchical military organizations. This translation facilitates the development of the SME’s needed to define the broad skills or managerial types required by SJA of the execution/command posts.

A possible connection between managerial types required by execution/command posts and the hierarchical military organization is proposed as follows taking into account the work features done in a military organization. In order to achieve a realistic connection, some adaptation to SMTI method is needed. Practically, some of the managerial models were redesign in order to reflect the features encountered in the military work field. Only the modified models will be mentioned next:

(1) Enterprising manager – cAB: enterprising managers exploit new markets, recognize and grasp new opportunities and generally enjoy the rough and tumble of the professional life. They respond immediately to a challenge, especially if it involves some personal and

professional risk. They can be ruthless and unscrupulous but also fun loving, larger than life characters.

(2) Action manager – caB: action management is at a premium in very fast moving situations, where the expression “work hard, play hard” has become commonplace. In specific key context, where action speak louder than words, such a management orientation is often called for. The ability to act fast, and to enact situations, ca be at a premium.

(3) Adoptive manager – cab: This person has to have great respect and faith in the organization and he or she needs to keep his/her minimal individual identity. The adopter-manager has immerse him or herself in the surrounding group and culture. Consequently this manager is able to carry out required tasks with a degree of persistence and precision.

The most important fact regarding the managerial roles exposed by Baruch & Lessem (1995) is the one that mention the translation between roles which is done daily by a manager. In other words, a manager may access or need to use several types of management throughout a day starting from managing his own time and resources to manage others and their resources. From a military organization point of view, the number or managerial types required depends on the organization hierarchical level and the type of post occupied (execution or command). A possible distribution of managerial types is proposed in the table below.

Organizational Level	Execution posts Manager type	Command posts Manager type
1	adoptive manager	adoptive manager
	analytical manager	analytical manager
	action manager	action manager
		people manager
2	adoptive manager	adoptive manager
	analytical manager	analytical manager
	action manager	action manager
	people manager	people manager
3		development manager
	adoptive manager	adoptive manager
	analytical manager	analytical manager
	action manager	action manager
	people manager	people manager
		development manager
4		manager of change
		enterprising manager
	adoptive manager	adoptive manager
	analytical manager	analytical manager
	action manager	action manager
	people manager	people manager
		development manager
		manager of change
	enterprising manager	
	innovative manager	

Table no. 1: Distribution of managerial roles for military organizations³⁰

³⁰ Source: personal study

For every hierarchical level a predominant role is proposed. For level 1, the predominant role of a command post should be as a people manager. For level 2, the role should be of a development manager. For level 3, there two new roles needed, manager of change and enterprising manager. And finally for the highest level the innovative manager is a request for the command posts.

Conclusions

This paper analyzed constrains showed over time by traditional job analysis in dealing a changing working environment and also the permanent need of organization to cope with internal and external challenges. As any organization, the military organizations are subject to internal and external factors which oblige them to forecast and predict future constrains. The shift from traditional job analysis to strategic job analysis is a possible solution to obtain organization flexibility.

Strategic job analysis proposes the replacement of rigid concepts like skill and behaviour with a more general ones, broad traits or managerial roles. Like any other method, SJA may have flaws and be costly, but the costs of not trying it would certainly be higher (Singh, 2008).

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TRAINING, FROM NATIONAL TO ALLIANCE REQUIREMENTS

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Abstract: *Nowadays training is running standardized, following very clear rules, norms and principles established at national and allied levels. Given that the environment we are experiencing is changing very rapidly, anticipation and planning over longer horizons becomes very difficult, perhaps even impossible. I think there is a need for a new type of training to generate perfectly adaptable soldiers, capable of making quick decisions under uncertainty, as in the period ahead, those who will invest in quality training will be far ahead of others.*

Keywords: *education, training, exercises, evaluation, standardization, interoperability.*

Introduction

Technological acceleration led to a complex dynamic of all activities, including military, changes are very fast in all areas of their deployment cycles are shorter and more intense rather than long and stable as before. Lifelong learning and intelligence are necessary and mandatory for an organization or individual, not to stand out, but simply to survive.

Currently the military training runs standardized, following clear rules, norms and principles set out in national and allied environment. Given that our environment is changing very quickly, anticipating and planning will become very difficult, perhaps impossible, on longer time horizons.

For these reasons one may believe that we need a new kind of training that delivers perfect adaptable military, able to make quick decisions under uncertainty. I am convinced that in the future those who will invest in quality training will be far ahead of the others.

Train as you fight, it is one of the principles used in planning instruction within the structures of the military education. Until proven otherwise, this is a balanced principle, offering strength, character and a strong military push, a slogan that stimulates military to perform better.

The first military elements, clearly defined, have occurred due to the human desire to develop, to seize food, materials, goods, territories, and to have power, on the basis of organizing simple families, tribes, with elementary principles that started the operation based on a hierarchy, using simple tactics, especially emphasizing the importance of weapons and physical force in winning the battle.

With the advent of the first forms of state organization and the growing needs of resources owed to the incentives of economic, social and political life, military organization takes on an increasingly important role in the societies. As a result, there appeared two important categories of social groups who dealt with the military power of a state, e.g. the active part dealing with the military training, strategy and soldiers' involvement in battles and the supporting part involved in weapons production.

Following the development and emergence of various types of weapons (especially firearms), conflicts with the involvement of a large number of soldiers required a more acute need for organization, use of strategies, development regarding the principles of using force elements. All of these lead to the emergence of military structures with permanent role.

These structures are organized on the bases and principles that are constantly evolving; the state has the capacity to generate new categories of modern weapons and flexible military structures with high firepower and high mobility and therefore the most powerful military states usually have the supremacy in all regions of the world.

In the early stages of military structures' development, the concept of a single force command was very easy to use, considering the small number of troops and means used in the first conflicts. With the increasing size and environments multiplication of the tactical field related to the armed conflicts, that extended from the land to water and to air, the military issue got further complicated. Latest types of armed conflict, regardless of the conflict in Afghanistan, Iraq, Georgia, Ukraine, Mali and Syria have shown the ability of countries to generate armed forces in response to increasingly diverse conflicts, which can require classical military means of action, or modern military and nonmilitary means as for the fight against terrorism or, more recently, against hybrid conflicts. In all these conflicts we see a substantial change in the way of training, organization and management of forces.

1. Training

The role and importance of training are recognized in society as development engines in all fields. Training is necessary for all the individuals engaged in different economic or non-economic entities, of course, this educational activity is also needed to personnel of the institutions dealing with security and integrity of the country, as the armed forces staff.

1.1. Training reflected in the specific Romanian military doctrine

Romanian military training doctrine is one of the specific normative acts underlying the transformation of the Romanian Armed Forces. This doctrine defines based and direct military education, instruction, exercises, evaluation and training through practice. This doctrine emphasizes the fundamentals of training in achieving the development of armed forces' combat capacity.

The doctrine addresses the concept of military training as a very important element of the physical component, which with the psycho-moral and conceptual components establishes the operational capacity of the army.

The doctrine defined military training as the activity done by the military personnel to fulfill the specific military tasks/missions by using the supplied equipment¹.

Training components are: military education, instruction, exercises and training with practice. These components are interdependent, there is no clear delineation between them and in order to achieve an efficient and complete training of forces requires a comprehensive approach to all these components.

If instruction is needed to cope with predictable events in the field of operations, in exchange, education prepares military for unexpected situations, unfamiliar to them². Education and research are appropriate means for the development of knowledge³.

Military training aims at achieving staff are able to perform specific tasks. This goal is to be realized whether the specific objectives established for each training component are achieved.

¹ *Doctrina instruirii Armatei României* (In English: Romanian Armed Forces Training Doctrine), 2006, p. 14.

² Florin Nistor, *Să redescoperim arta operativă maritimă*, "Carol I" National Defence University Publishing House, Bucharest, 2017, p. 144.

³ *Ibidem*, p. 141.

1.2. NATO military training documents

The orders issued by the General Staff (since 2017, the Defense Staff) have always respected the vision and guidelines of NATO in this field.

*SACEUR's annual guidance on NATO education, training, exercise and evaluation 2017-2021 (SAGE 17-21)*⁴ is the document in force issued by NATO for the regulation of the activity in question.

In brief, SAGE 17-21 represents the document by which ACO⁵ periodically provides guidance and targets of strategic level, priorities and implementation requirements of NATO policy in ETEE⁶ field, thus, SAGE allows to the Member States to prepare, adapt and integrate national programs within NATO programs.

SAGE covers the period 2017-2021 and is guided by the NATO Summit in Wales. It is the foundation of the process of drafting The Military Training and Exercise Programme – MTEP for the same period of time as SAGE.

SAGE 17-21 is divided into a main body and six annexes containing general principles in ETEE, SACEUR priorities in this area and guidance on the use of resources.

The document presenting SACEUR's vision on ETEE includes the following:

- Over the next 20 years, NATO must be able to act quickly and with agility in the fields of air, land, maritime, cyber and space to counter asymmetric or hybrid military actions;
- Adapting the force structure and correlation of this goal with a suitable ETEE program;
- All training activities should be relevant and beneficial for both the Alliance's and national needs;
- ETEE program should teach and develop skills and abilities of the military and civilian personnel to ensure the functions of the joint command structures;
- ETEE program effectiveness depends on resources and support of the nations.

SAGE 17-21 addresses both headquarters and force structures and establishes the ETEE priority areas and disciplines for the covered period. These areas are: air operations, allied ground surveillance system, CBRN weapons of mass destruction, civil-military interaction/cooperation, cyber threats and cyber defense, counterterrorism, electronic warfare, extended maritime approach and permanent naval forces, hybrid war, air and missile defense, information, lessons learned, cooperation with partners, strategic communication and logistic support.

By analyzing the content of this document one can see the diversity of the addressed fields and the request, permanent encouragement to the nations to participate with more resources, to show their willingness to introduce exercises in NATO's MTEP exercises program and to organize multinational exercises included in this list.

It can be easily seen that the orders submitted in training and exercises field by the Romanian Defense Staff or forces' categories are consistent with the document issued by NATO in ETEE.

The documents regulating ETEE activity are jointly drafted by the two strategic commands ACT⁷ and ACO and are as follows:

- Bi-SC 75-002, *Education, training, exercise and evaluation directive (ETE&ED)*, NATO, 2013⁸.

⁴ Training Synchronisation – NTEC, Allied Command Transformation, available online at: <https://www.act.nato.int/training-synchronisation-ntec>, accessed on October 29, 2018.

⁵ Allied Command Operations – ACO - is responsible for the planning and execution of all Alliance operations

⁶ ETEE - Education, Training, Exercise and Evaluation

⁷ Allied Command Transformation - provide the conceptual framework for the conduct of future combined joint operations.

- Bi-SC 75-003, *Collective training and exercise directive (CT&ED)*, NATO, 2013⁹.
- Bi-SC 75-007, *Educational and individual Training directive (E&ITD)*, NATO, 2015¹⁰.

These documents are continually updated by SAGE.

2. Adapting the military training to the future challenges

One can appreciate that by a pragmatic and efficient educational system, vector of transformation process, and also by a scientific research strictly applied to the military challenges of the times can be produced an highly educated and trained fighter, possessing a thorough management culture, able to operate into a multinational joint environment, to take risks, to identify points or critical areas and to implement change.

Military education mission is to generate and transfer knowledge to the personnel in the information system, public order, defense and national security system.

The goal of the educational process is to generate proficient graduates, compatible in all respects with their counterparts from NATO allied and partner countries, able to implement training and evaluation procedures, standards and techniques.

The fundamental objective of military education undergone in military schools and institutions is focused on providing human resources capable to assume responsibilities to fulfill their duties for which are trained, in order to achieve a modern, deployable, flexible and sustainable force structure holding the capacity to be employed in a wide range of missions both on national territory and beyond.

For the instruction and command of combat forces and the achievement of an optimal level of operationalization, an important role is played by the chain of command structure, which should be very simple. All the administration elements its subsidiaries from battalion headquarters level/battle group must be dismantled and should be transferred at brigade/echelon level.

Technical functions, work and health security staff, internal control management staff, standardization responsible, physical education responsible, intendent, force protection personnel should not be included in this type of command that must function only as decision maker for planning, executing and evaluating training in order to fulfill the entrusted tasks.

This organization of the command point, being the same in peacetime and in times of crisis or war will allow the implementation of the *train as you fight* concept.

Currently, the main change in the way the instruction is achieved is given by the elimination of the official type classic models with annual planning, explained to the smallest detail, with limited modification/addition possibilities.

Military and structures training takes place on the basis of their goals not on the training categories, subunits having established clear and precise tasks to be performed within a limited time. Throughout the training period military are evaluated by certified military instructors in the field and not by their subunit commandant.

Instruction structure overcame the limitations of officer type fixed program, instructions being carried on modules of activities increasing in intensity, difficulty and time, based on real scenarios.

⁸ NATO Education Training Exercise and Evaluation (ETEE), Allied Command Transformation, February 10, 2011, available online at: <https://www.act.nato.int/ETEE>, accessed on October 29, 2018.

⁹ *BI-SC Collective Training and Exercise Directive (CT&ED) 075-003*, October 02, 2013, available online at: http://www.act.nato.int/images/stories/structure/jft/bi-sc-75-3_final.pdf, accessed on October 31, 2018.

¹⁰ NATO Education Training Exercise and Evaluation (ETEE), Allied Command Transformation, February 10, 2011, available online at: <https://www.act.nato.int/ETEE>, accessed on October 29, 2018.

One can say that training gets features of the actual battle, with elements very close to the battlefield, the theater of operations.

Individual training will create a soldier of the future with qualitative physical and mental qualities, as mobility and capacity for action in all environments and with skills to use as many types of weapons and equipment.

Exercises are the higher form of integrative, complex and dynamic training of commandments staff and combat forces. They include common exercise on forces' categories or jointly of several tasks derived from the requirements for their missions. At the same time they provide operational support on which the evaluation of instruction is performed to assess the level reached by the control and execution structures. Another purpose of exercises is to train military structures and improve joint operational capabilities to fulfill their full range of missions for which they were established. Also, the exercises are performed to achieve the cohesion of combat structures.

Principles that should underpin planning of these exercises must be:

- Design unit – the top echelon sets the missions of the subordinated structures and approves the planning documents for their training;
- Freedom of action - every commander is entitled, based on the tasks defined by the upper echelon, to apply their training concept for the commanded structure;
- Responsibility - structure commander is responsible for producing the educational level of a command structure;
- Phasing - planning according to the set stages of instruction;
- Progressivity - from simple to complex, on the map, by simulation, in the field;
- Consistency - planning exercises in conformity to the achieved level of education.

Regarding exercise, I think they must be planned, executed and evaluated all the time as possible in the close conditions of the battlefield, of the operation theater, and to be conducted inter-arms, jointly, interinstitutional, multinational both on national territory and abroad.

These exercises need to involve both governmental organizations and agencies and other structures of the national defense system. There is also necessary to develop scenarios for these exercises to address emergency scenarios, crisis and war situations in order to cover all the possible critical actions and provide the possibility of practicing all the included procedures for the full range of missions of the armed forces.

Training by doing, from my point of view, there is not a final component of education but rather is a result of the training, which completes the training cycle. This phase involves the accumulation of professional experience in exercising the attributions, duties or missions and is supported by the accumulation of knowledge and development of skills achieved by covering the other components of training. Features of this phase are also aspects implied by broadening the horizon of knowledge and skills development by staff training, which is, in fact, in my view, qualitative transformations of training. All the achievements or failures of other components of training are highlighted within it.

It is the phase when the whole process of training can be analyzed and on the basis of this analysis corrective measures can be applied for a new cycle of training.

I believe that modernization in training, at present, is given and ensured by permanent connection with NATO's operational environment, both conceptually and in actional plan, by the further standardization by implementing to the national level of the NATO standards, by the development of agile, expeditionary forces' structures capable of jointly acting in a hostile changing and complex environment, varied in terms of missions and how to fulfill them, by the relationship of the national structures with similar forces' structures in the Alliance along their entrusted missions, by the creation and use of a material training base suitable for the

training needs and as well as by the enhancement of the role of training through simulation by extending the range of missions.

Conclusions

Maintaining operational relevance, both in the Alliance, and in the region, it would be difficult to achieve without a very seriously and standardized approach of the interoperability of education, training, educational process and instruction.

Education must be part of the whole process of transformation and modernization of the military system. The Procurement Program with new technique together with a continuation of the training process for personnel's preparation and adaption to these new types of techniques allow harmonization between the operating procedures of equipment and how integrated systems are used in the general concept of combat at the strategic, operative and tactical levels, in the end the interoperability being achieved with the allied and partner countries.

The deployment of own troops or military infrastructure items are not decisive in providing security, but the membership to a military alliance based on firm commitments to collective defense remains a definite guarantee of security. To fulfill the shared commitments is essential to reach a high degree of interoperability with all alliance members.

The key pillar of interoperability is the education with the same instrument, applying the same educational principles, use of common documents in the planning, execution and evaluation of training.

Studying documents and terms used by NATO and the Romanian Armed Forces one can find that terminology is similar; we speak and act according to the same principles and procedures and we are always working to standardize these procedures, to become more interoperable.

Investing in education is to ensure the development of any country and hence evolution of the armed forces of these countries.

The diversification of the battlefield lead to a permanent change in the planning principles of the armed struggle, and in the development of training and military actions. Who will adapt continuously without waiting for external stimuli will strengthen the national security of the state.

Creation or development of new forces' structures to counter military threats in some regions must start from the type of battlespace and missions they would have, and their organization must be the effect of land survey, the objectives of the area of responsibility, the current realities of the conflict zones, the actors involved in these types of conflicts.

Changing the planning and development of training must necessarily come as a goal, to provide a flexible framework and visionary structures on military preparation. Certification of instructors, development of polygons and scenarios for exercises and eliminating excessive control focused mostly on documents not on quality instruction create elements for developing independent structures that can respond to various threats.

There is required a new type of education based on efficiency and performing. Young minds should be prepared now for a future complex and ambiguous. Those who invest in quality education will be long before those who treat lightly this. As a Romanian admiral said "*an informed society is built by educated people for educated people*"¹¹, the same it should be done in the military educational field.

We must realize that human resource is the most important resource we have to manage in the military or civilian organizations. New technique and tactics should be used by

¹¹ Clubul amiralilor, *Amiralul Dr. Gheorghe Marin în elita Armatei României*, CTEA Publishing House, Bucharest, 2010, p. 550.

well trained personnel able to operate and to implement those. Consequently, it is clear that military education and training should be approached with maximum responsibility as it is the main pillar for the evolution of the military system and the proper achievement of military missions by the armed forces civilian and military personnel.

Also, in my opinion, equally, alongside education, scientific research plays an especially important role and together they form a proficient team for a competitive and hence modern armed forces able to adapt to any challenges of the moment.

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A FAILED STATE'S LONG WAY BACK

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Abstract: *This paper will analyze the causes that led Somalia to become a failed state and the slow pace of recovery discovered by Mogadishu in the recent years. The study is based on qualitative research, analyzing documents which depict the particular history of Somalia and the causes that led to the civil war, as well as quantitative data, when analyzing the number of casualties and refugees that resulted following the unfolding of the Somali conflict. Examining also the rise of the terrorist group Al-Shabaab and the ways in which such organizations manage to replace the role of the state, the paper concludes that the task of rebuilding a failed state is a long and arduous process, in which the international community should adapt its measures to the local specificity of the concerned area. However, as the recent developments show, there is room for hope for the Somali state and people.*

Keywords: *failed state, civil war, piracy, terrorism, military intervention, humanitarian intervention, Somalia.*

Introduction – Short history of Somalia

Somalia's history does not denote the unity of population and history of a typical state. For long times Somalia's coast was ignored by the Europeans, until the middle of the nineteenth century, due to the hard accessibility and the difficulties of anchoring on its shores, which led to multiple shipwrecks¹. Composed from five major ethnic tribes, the country has also a mixed history regarding its colonial past, divided between the British and the Italians.

It is worth mentioning that the Somali people were hardly placed under a sovereign power, due to their nomadic nature, but also due to the resistance they showed against the colonial powers. The British Somalia was a colony mainly on paper, numerous local revolts making the territory largely autonomous from the British rule. The Somalis went to war in 1900-1904 and also in 1910, when they forced the British to evacuate the territory, albeit only temporary².

From 1941 until 1950, the British administered the whole modern day Somalia, even though after World War II the former Italian lands were placed under UN control. From 1950, Italy was to act as the trustee power on its former colony, under the arrangement that this territory would become independent within 10 years³. Somalia gained its independence in 1960, after the former Italian Somalia and the former British Somalia were integrated into the same state.

However, the newly formed state of Somalia, which had the largest inland coastline in Africa, was largely poor, diverse and ill regarded by its neighbors, Ethiopia and Kenya, with

¹ Endre Sik, *Histoire de l'Afrique Noire, Deuxième Édition, Tome I*, Maison d'Édition de l'Académie des Sciences de Hongrie, Budapest, 1962, p. 278.

² Endre Sik, *Histoire de l'Afrique Noire, Deuxième Édition, Tome II*, Maison d'Édition de l'Académie des Sciences de Hongrie, Budapest, 1964, p. 61.

³ Harry A. Jr Gailey, *History of Africa from 1800 to Present*, Holt, Rinehart and Winston Inc., 1972, p. 229.

whom it had territorial disputes. Under the scepter of the Cold War, Somalia fell under the USSR influence, as a response to the American influence in Ethiopia. The future struggle of the Somali state will be strongly linked to the ethnic separation of the Somali people. Outside the borders of the state, the Somali people were present in three neighbor countries: Kenya, Ethiopia and the future Djibouti, which was part of the French Somalia.

Faced with the challenges raised by the closing of Suez Canal, which triggered economic difficulties, as well as with the strong stance of neighboring leaders, Haile Sellassie and Jomo Kenyatta, the Republic of Somalia managed to end, for the moment, the territorial disputes, by concluding bilateral agreements with Ethiopia, in 1964, in Khartoum, and with Kenya, in 1967, in Kinshasa. The relations with the French Somalia were not tense, but the people from the future state of Djibouti were not interested, in that moment, to obtain their independence or to join Somalia. The economic considerations were as important as the political ones and, given the aridity and the poverty of its soil, the French Somalia decided to remain part of France, as the French subventions provided considerable help⁴.

However, the internal challenges of Somalia were far greater than the external ones. The tribal tendencies threatened the unity of the state, with the heads of the tribes being unwilling to give up on their privileged position in favor of a strong central state apparatus. Moreover, the health system was in chaos, despite the bravery propagated through the Italian literature during the fascist regime, which claimed a new hospital was inaugurated in Mogadishu for the indigenous people, while another for the military personnel. Furthermore, the Italians claimed they built four dispensaries in the capital, able to cure more than 5 000 people each month, as well as numerous dispensaries, infirmaries and hospitals in all the regions of Somalia⁵.

In fact, the almost total absence of medical aid during colonial rule left the Somali people prone to the widespread of tuberculosis, malaria and smallpox. The education was in no better shape, with almost the entire rural population illiterate, while the situation in the urban areas was not significantly better⁶.

Against this difficult background, in 1969, Somalia experienced its first coup, as colonel Said Barre overthrew the former regime. The event came in the context of a regional turmoil, several months after the Sudanese revolution and several weeks before the Libyan coup. The regional events switched the influences in Somalia, as the USSR assisted the rise to power of Mengistu, in neighboring Ethiopia, which triggered the American interest in Somalia.

However, the greatest challenges of Somalia remained internal. Said Barre was part of the Marehan clan, a section of the Darode people who were caught in the middle of the country, while the north belonged to the Issas and the south to the Hawieh⁷.

1. The steps towards a failed state

1.1. Somalia during Barre regime

The Somali state, which was ruled through democratic means, transformed drastically under Barre rule. He ruled through revolutionary council, while renouncing to the Constitution, interdicting the political parties and dissolving the Parliament, in what became a

⁴ Joseph Ki-Zerbo, *Histoire de l'Afrique Noire, d'hier à demain*, Librairie A. Hatier, Paris, 1972, p.561.

⁵ *L'Italie pour les populations islamiques de l'Afrique italienne*, Soc. Ed. "Novissima", Roma, 1940, p.115.

⁶ USSR Academy of Sciences, Institute of Africa, *A history of Africa 1918-1967*, "Nanka" Publishing House, Central Department of Oriental Literature, Moscow, 1968, p.347.

⁷ Peter Calvocoressi, *World Politics since 1945*, Sixth Edition, Longman, London and New York, 1991, p. 543.

military autocracy⁸. Siad Barre declared on October 21st 1970 that the Somali state will be a socialist state, adopting the scientific branch of socialism.

The place of revolutionary Somalia was put by its leaders in the so-called anti-imperialist camp, with close ties with the USSR, China and North Korea, a position taken in opposition to the old links to the European colonialism and neo-colonialism, as viewed by the new Somali political class⁹. Shortly after, the nationalization process gained impetus and several key Italian run companies became property of the Somali state.

Somalia invaded Ethiopia in 1977, in the wake of the Derg accession to power, gaining control of the Ogaden region, largely inhabited by Somali ethnics. However, given the communist ideology of the Derg regime, the USSR shifted its strategy and decided to help the Ethiopian army. Against this background, the Somali army, decimated by one third, was forced to retreat within its borders, thus putting an end to the conflict. However, the defeat encountered also put an end to the talks of uniting the Greater Somalia and led to the discontent of the army and of the population.

Coming under increased pressure, varying from attempts of murdering him to military interventions from neighboring Ethiopia, Barre regime fell after an Issa incursion from Ethiopia was violently repressed, action which led to murderous riots and wide spread chaos. Barre bombed and vastly destroyed Hargeisa, the capital of the semi-autonomous present day Somaliland, as well as Berbera and Burao. However, the battle, which erupted into a civil war culminated with the victory of the forces from Somaliland. Shortly after, the south of the country went out of the central government authority and finally, in 1991, the central area of the country ousted the control of Barre, whose regime thus failed.

1.2. The UN interventions in Somalia

The fall of Barre quickly transformed Somalia into a failed state, image that still exists, partially, today. A failed state, according to Encyclopedia Britannica, is *a state that is unable to perform the two fundamental functions of the sovereign nation-state in the modern world system: it cannot project authority over its territory and peoples, and it cannot protect its national boundaries*¹⁰.

The situation quickly deteriorated after the old regime's demise and the war gripped the whole country, with heavy clashes also in capital. In November 1993, the most intense fighting broke out in Mogadishu, with two main factions opposed: one supporting the interim president, Ali Mahdi Mohamed, and the other one supporting the chairman of the United Somali Congress, General Mohamed Farah Aidid. The humanitarian situation was critical: over 4.5 million people, more than half the population, were threatened by severe malnutrition. Moreover, it was estimated that more than 300 000 people died since November 1991 and at least 1.5 million were at immediate risk¹¹.

Against this background, the UN Security Council urged all parties to cease hostilities and decided that all states should implement a general and complete embargo on all deliveries of weapons and military equipment to Somalia, through its resolution 733/1992¹². Later on, in March 1992, an agreement for the implementation of a cease fire was concluded between the

⁸ Mohamed Abdiwahab, *The rise and fall of the Somali State*, Stratfor, available online at: <https://worldview.stratfor.com/article/rise-and-fall-somali-state>, accessed on September 22, 2018.

⁹ Luigi Pestalozza, *Chronique de la révolution somalienne*, Editions Afrique, Asie, Amérique Latine, 1974, p.34.

¹⁰ Naazneen H. Barma, *Encyclopedia Britannica*, available online at: <https://www.britannica.com/topic/failed-state>, accessed on September 29, 2018.

¹¹ UN Department of public information, *The United Nations and the situation in Somalia*, reference paper, 30 April 1993, p.1.

¹² United Nations, Resolution 733/1992, available online at: [https://undocs.org/S/RES/733\(1992\)](https://undocs.org/S/RES/733(1992)), accessed on September 22, 2018.

interim president and the General Aidid, in Mogadishu. Taking into consideration the positive development, the UNSC decided, through resolution 751/1992, in April, the creation of UNOSOM, in order to provide humanitarian assistance to those in need.

However, this measure proved to be not effective, even if the UNOSOM was increased significantly, to 4 219 members. The practice of looting, conducted by heavy arms gangs, done to the delivery and distribution points, as well as attacks conducted on docks and airports, meant that the delivery of humanitarian support was heavily obstructed¹³. The capital was divided by fights between rival gangs, while the rest of the country was gripped by the same internal fractions. In the meantime, Somalia had no central government to intervene or even to negotiate with. This situation was further complicated by the refusal of some of the gangs to allow the deployment of UN troops to deliver the humanitarian packages. The situation reached such catastrophic levels that, according to estimates, 3 000 people died each day in Somalia, due to starvation, while the warehouses of the UN remained stocked¹⁴.

Under the given conditions, the UN decided to act according to Chapter 7 from the UN Charter and to authorize the use of all necessary means to establish a secure environment in Somalia, according to the UN resolution 794/1992, issued on December 3rd¹⁵. The USA responded to the UN call and decided to intervene military in Somalia, through the *Operation Restore Hope*. The mission was composed, besides US soldiers, by forces from 23 countries¹⁶. The situation moved in the right direction, an agreement being reached in January 1993, at Addis Ababa, between 14 Somali groups and the international community.

Given the positive developments, the UN decided to make the transition to a new UN led mission, UNOSOM II, in May 1993. In this new format, the mission was provided to cover the whole territory of Somalia and to be composed of 28 000 military and 2 800 civilians¹⁷. Despite not having yet a central government, a breakthrough was made in this direction, in March 1993, in Addis Ababa. The parties agreed to the formation of a Transitional National Council, which consisted of 74 members – three members from each of the 18 regions of the country (two men and one woman), one from each of the 15 national political movements and five from Mogadishu¹⁸.

However, despite the improvements, the situation deteriorated again quickly. In 1993, 24 soldiers from Pakistan were killed in an attack happened in Mogadishu. The UN mission retaliated in an operation that led also to civilian casualties, which angered the local population. In October, the same year, 18 US soldiers were killed in another operation, situation that provided a further rift between the UN led coalition and the local population. The US decided in 1994 to withdraw its military presence, decision took also by Belgium, France and Sweden¹⁹. Given the continuous political turmoil and the constant violation of ceasefires, the UN decided to withdraw in March 1995, putting an end to UNISOM II and leaving Somalia in a similar state of chaos. On this background, religion became a more important and influential factor, radicalization paving the way to the apparition of Al-Shabaab, one of the most brutal terrorist organizations.

¹³ UN Department of public information, *op. cit.*, p. 3.

¹⁴ *Ibidem*, p.5.

¹⁵ United Nations, Resolution 773/1992, available online at: [https://undocs.org/S/RES/794\(1992\)](https://undocs.org/S/RES/794(1992)), accessed on September 22, 2018.

¹⁶ United Nations, available online at: <http://www.un.org/Depts/DPKO/Missions/unosomi.htm>, accessed on September 22, 2018.

¹⁷ UN Department of public information, *op. cit.*, p. 8.

¹⁸ *Ibidem*, p. 11.

¹⁹ United Nations, available online at: <https://peacekeeping.un.org/mission/past/unosom2backgr1.html>, accessed on September 22, 2018.

1.3. Somalia in the post UN intervention era – how Al-Shabaab came into existence

After the UN withdrew from Somalia, several international conferences were organized, with the aim of finally bringing peace in the war tormented country. However, the situation remained tense. Outside Somaliland, the former British colony, which declared its independence in 1991 and that was quite stable (however, no member of the international community recognized Somaliland as a sovereign state), the chaos continued to prevail. Capitalizing on the Transitional Federal Government (TFG) weakness (body established in 2000, after a peace conference held in Djibouti), the Islamic Courts Union, a radical Islamic organization, gained control of most of the southern part of the country and imposed the strict Sharia law. The development from Somalia prompted Ethiopia's military intervention, from 2006 to 2009, backed by the African Union and by the United States. The actions, which meant that Mogadishu (TFG) started to control most of the country for the first time since the fall of the Barre regime, led to the split of the Islamic Courts Union, which prompted the formation of Al-Shabaab, a terrorist organization that, guided by the strict Islamic law and the profound despise of Western values, started to gain control over parts of the country.

The Ethiopian intervention, strongly backed by the US, alienated the locals, as civilian casualties quickly grew and the local arrangements put by the Islamic Courts system, which managed to bring a certain level of peace, quickly vanished.

Al-Shabaab, which literally means *The Youth*, is led ideologically by a mix of Salafism and Wahhabism, seeking to create a fundamentalist Islamic state in the Horn of Africa. It managed to obtain support of the population by providing security and also financial support, recruiting mainly adolescents from Somalia and Kenya. Its operations were largely enhanced financially by controlling the port of Kismayo, through which the coal trade was controlled by the terrorist group, until the Somali forces managed to regain it, with Kenyan support, in 2012.

Moreover, terrorist from other countries, namely Yemen and Afghanistan, started to come to Somalia and join Al-Shabaab, bringing new technology. In response, the African Union deployed forces in Somalia, in 2007, under the AMISOM mission, that was mandated to defend and to launch pre-emptive strikes against Al-Shabaab²⁰. Besides the conflict between Al-Shabaab and the AMISOM troops, the country remained divided by the clan interests, by lack of agreement between moderates and radicals and got confronted with a new phenomenon, piracy, which developed mainly in the northern Puntland, as a mean of surviving. With the disintegration of the naval coast army of Somalia, fishermen from neighbor countries started to fish in the Somali waters, while large vessels started to throw waste off the Somali coasts. Starting as an act of self-defense, piracy quickly developed and evolved, in terms of attacks and technology used, due to the large financial compensations received for the people kidnapped.

Quickly, regardless of ideology, the piracy leaders started to cooperate with Al-Shabaab, a union which was more result-oriented rather than ideological based. The piracy was at its peak between 2008 and 2011, period in which more than 700 attacks took place²¹. Afterwards, due to the combined effort of the EU, done through the naval operation Atalanta, NATO and China, from neighboring Djibouti, where it opened a military base, the piracy phenomena was contained.

²⁰ Bronwyn Bruton, "In the Quicksands of Somalia", *Foreign Affairs*, November 01, 2009, available online at: <https://www.foreignaffairs.com/articles/somalia/2009-11-01/quicksands-somalia>, accessed on September 26, 2018.

²¹ T.G., "Why Somali piracy is staging a comeback" *The Economist*, April 04, 2017, available online at: <https://www.economist.com/the-economist-explains/2017/04/18/why-somali-piracy-is-staging-a-comeback>, accessed on September 29, 2018.

Al-Shabaab announced on February 10th, 2012, joining Al-Qaeda. However, their military insurgency was experiencing a slowdown, amid the presence of Kenyan troops in west, Ethiopian troops in the west and AMISOM troops in Mogadishu²², a contingent that reached around 22 000 soldiers, although initially it was composed by just a bunch of Ugandan soldiers.

Despite joining the much known Al-Qaeda, the group continued to operate mainly on national level. The exceptions were the attacks conducted in the neighboring Kenya, country that heavily backs the AMISOM. In 2013, the terrorist groups laid siege at a shopping mall in Nairobi, killing 67 people, while in 2015 attacked Christian students at Garissa University, killing 148 people²³.

2. Instauration of the federal government – the dawn of a new era

In August 2012, the Transitional Federal Government ended its mandate, paving the way to the inauguration of the Federal Parliament of Somalia, which enabled the appearance of the first Somali government since the fall of Siad Barre. The president was elected by the members of the Parliament, in what represented a new beginning for the country. The presidential elections in 2017 represented a new milestone that the Somali country surpassed well, which led to the election of former Prime Minister, Mohamed Abdullahi Mohamed, as president, in a surprise result. However, the transition was peaceful, the former president, which was runner-up in 2017, conceding defeat and congratulating the winner. Mohamed benefits from international backing and the results are starting to be noticeable.

However, despite seeing some important progress being made, with piracy decreasing and famine contained, there is still much to be done in Somalia. Inside the federal system, the central government still controls few areas except Mogadishu. Somaliland and Puntland are respecting the decision taken in the capital only in theory, while most of the taxes collected, from the port of Mogadishu, and are used for the functioning of the central apparatus²⁴. The national army is more or less inexistent, with soldiers manifesting their loyalty mostly to clan leaders, rather to the federal government.

The situation presents concern, as, according to the arrangements, AMISOM should withdraw from Somalia, whose security forces should be able to take over the control of the national security, by December 2021, the time of the next election. However, there is growing concern regarding the capacity of the Somali army and national police to provide alone the security of the country. Around 1 000 military from the AMISOM were supposed to be withdrawn from Somalia by October 2018, decision not validated by the UNSC, due to the concerns related to the capacity of the Somali forces to fill the gap. Officially, the Somali army is composed of 20 000 troops, but it is difficult to pinpoint the actual number. The training provided by AMISOM is not enough, while the payment delays, which reached even 13 months, create a difficult environment for a proper army functioning²⁵.

²² J.L., “How do you solve a problem like Somalia”, *The Economist*, February 23, 2012, available online at: <https://www.economist.com/baobab/2012/02/23/how-do-you-solve-a-problem-like-somalia>, accessed on September 26, 2018.

²³ Amanda Sperber, “Somalia is a country without an army”, *Foreign Policy*, August 07, 2018, available online at: <https://foreignpolicy.com/2018/08/07/somalia-is-a-country-without-an-army-al-shabab-terrorism-horn-africa-amisom/>, accessed on September 22, 2018.

²⁴ “Most failed state”, *The Economist*, September 10, 2016, available online at: <https://www.economist.com/middle-east-and-africa/2016/09/10/most-failed-state>, accessed on September 16, 2018.

²⁵ Vanda Felbab-Brown, “Securing Somalia”, *Foreign Affairs*, February 20, 2017, available online at: <https://www.foreignaffairs.com/articles/east-africa/2017-02-20/securing-somalia>, accessed on September 25, 2018.

Terrorism, meanwhile, remains high on the agenda and is one of the most difficult challenges faced by the Somali authorities. The most violent terrorist act conducted by Al-Shabaab happened on October 14th 2017, when, according to the government sources, more than 500 people were killed, after a violent twin explosion. The terrorist organization continues to manage attacks in the capital city, only in 2017 being registered at least 22 such terrorist acts Mogadishu²⁶.

Moreover, the regional rivalries affect the stability and evolution of Somalia. Turkey and the UAE are competing for influence in the country. In October 2016, Turkey announced the intention to open a military base in Somalia, action concluded in 2017. Turkey's military involvement came after a prolonged presence in Somalia, since 2011. In 2012, the country became Turkey's first recipient in terms of assistance for development. Furthermore, in 2011, the first official visit by a head of state or government from outside Africa was conducted by, back then, Prime Minister Erdogan. Turkey also was the first non-African country which appointed a new ambassador in Mogadishu since the start of the civil war²⁷. Meanwhile, the EAU opened, likewise, a military base in Somaliland, triggering further disagreements between Hargeisa and Mogadishu, in terms of foreign policy. Furthermore, the Gulf crisis, which triggered hostile actions from both Saudi led coalition and Qatar, complicated the dynamics in the Horn of Africa, which became a proxy in the quarrel from the Gulf.

Conclusions

Although the overall image of the last 20 years in Somalia is rather bleak, there are some positive signs which occurred over the years. Moreover, there is hope when looking to the future, in what concerns the regional cooperation. Even though the disagreement from the Gulf persists, the Horn of Africa is experiencing positive developments. The decision to resume diplomatic relations between Eritrea and Somalia, on June 30th 2018, is a positive sign for the peace process in Somalia. Eritrea has been heavily involved in supporting Al-Shabaab, on Somalia's soil, during the years, aspect, which, cumulated with the other frozen conflicts in which Eritrea was part, contributed to the insecurity in the Horn of Africa. Now, with Eritrea being gradually reinserted into the international community, after concluding peace agreements with both Ethiopia and Djibouti, in 2018, it is expected to see good regional development in terms of security, in the Horn of Africa.

Slowly, Somalia is starting to shrug off the image of the failed state, which persisted since 1991. However, the state remains fragile and caution should be the paradigm for the years to follow. The transition from AMISOM forces to the Somali army, in terms of security, will be the ultimate test for the measures took in the last couple of years in Somalia. However, even if this transition is inevitable, in the long run, the international community should assist Somalia in surpassing this important test, in order to avoid the repetition of what was, probably, the most severe humanitarian crisis in the recent history.

The international community failed Somalia by not understanding its unique characteristics and its divided past, which entitled a series of events that resembled to no other crisis in the world. After two UN humanitarian interventions and several foreign military interventions, the international community should assist Somalia in making its own choices.

²⁶ "Bombings in Mogadishu – a 2017 timeline", Al Jazeera, October 22, 2017, available online at: <https://www.aljazeera.com/indepth/interactive/2017/10/attacks-somalia-timeline-171021144546962.html>, accessed on September 25, 2018.

²⁷ Gonca Oguz Gok, Emel Parlar Dal, "Understanding Turkey's Emerging "Civilian" Foreign Policy Role in the 2000s through Development Cooperation in the Africa Region", *Perceptions Journal of International Affairs*, Autumn-Winter 2016, Volume XXI, Number 3-4, ISSN 1300-8641, Center for Strategic Research, Ankara, 2017, p. 84.

The local rivalries that the Gulf and the Horn are sharing are not helping the case, but recent developments entitle the hope for better days.

A failed state always has a long way back to follow in order to reach stability, but the journey will eventually lead to reintegration and reconciliation. A Somali proverb says “A man who doesn’t know about war is likely the one who rushes to it”. The new Somali generation knows everything about war and not so much about hopes and dreams. It is time for them to rush to peace and growth.

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THEORETICAL CONSIDERATIONS ON NATO'S APPROACH ON HOST NATION SUPPORT. CASE STUDY ON ROMANIA

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Abstract: *The HNS is both a category of logistic support applicable to Article 5 and Non-Article 5 scenarios type and a choice that must be carefully planned and organized to reduce the dependence of NATO missions on their logistical side. Thus, with the accession of local resources, it is obvious that the elimination of time necessary to bring these resources from other places is achieved, which reduces the time necessary for the deployment of troops participating in military activities in Joint Operation Area (JOA) and gives the fighting actions a much greater flexibility. In NATO doctrine, it is considered that the Host Nation Support plays an essential role in gaining decisive advantages over the opponents' forces. The main purposes of this paper is to present how Host Nation Support (HNS) concept is understood and implemented by NATO member countries, also when our country can provide this type of logistical support, responsibilities assumed in terms of planning and providing HNS and the HNS management system of Romania.*

Keywords: *Host Nation Support, North Atlantic Treaty Organization, Romania, logistics, resources, planning, providing.*

Foreword

Currently, the main features of the current international political environment are instability and insecurity. Thus, the deployment of forces and the intervention of some states in the internal affairs of other states produce distrust and suspicion, and accentuate existing conflicts or generate new ones, complicating increasingly the relations between the states of the world.

The "frozen" conflicts persistence near our country, which can degenerate at any moment in real confrontations, contributes to maintaining a climate of uncertainty for Romania's security. The intervention of the Russian Federation in internal policy of Ukraine, the annexation of Crimea, the intervention of this country in internal affairs of Republic of Moldova, Georgia, Armenia and Azerbaijan and the maintenance of a instability state in Balkans, despite the efforts of international organizations to eliminate conflicts in these zones, all of them are factors that can lead anytime to the re-emergence of instabilities in the immediate vicinity of our country.

Increasing instability in the southern neighborhood of NATO, from Middle East to Northern Africa, is also a major challenge to Alliance security. All of this can have long-term consequences for both the security of Euro-Atlantic territories and the stability across the world.

Since its establishment, NATO has been aimed at defending the independence and sovereignty of member countries through its own military capability and to discourage and to defend from all possible forms of aggression against any of its members or even against entire North Atlantic Alliance.

Romania, as always in its history, is located in an area where there are many interests and additionally since 2004 when joined NATO our country received a new responsibility, namely to defend the eastern border of the North Atlantic Alliance.

Due to the geostrategic position and the status of NATO member country, the most important consequences of the current security environment challenges for Romania are: an increased number of major multinational military activities, the prepositioning of NATO military materials and the establishment of military structures with NATO Command status on our national territory.

In line with the country's *National Defense Strategy for 2015-2019*, Romania needs to focus its strategic efforts on the citizens' security and national territory defense, as well as on supporting allied and partner states, in line with the commitments made under international signed treaties. In order to achieve these objectives, all necessary measures for this purposes must be taken at national level to develop our country's capacity to respond to new challenges of the security environment and to prepare population and national territory for defense.

Although the logistical support of troops participating in military activities is naturally the responsibility of each nation, nowadays we can increasingly encounter cases where two or more NATO nations participate in logistic effort needed to support together their own forces. Military practice has shown that when the logistical capacities of two or more nations have been put together, the result was that the new logistics capacity created was stronger than the actual arithmetic sum of the capabilities of the participating countries. However, we must keep in mind that, in order for that sum of capabilities to be more than a simple accumulation, their planning and use must be centralized and organized.

1. Host Nation Support in NATO approach

The Host Nation Support (HNS) concept is implemented in all NATO member countries through NATO Principles and Policies for Host Nation Support (MC 334/2) and Allied Joint Doctrine for Host Nation Support (AJP-4.5 (A)), publications in which the Host Nation Support (HNS) is defined as *"The civil and military assistance rendered in peace, crisis and conflict by a Host Nation (HN) to allied forces and organisations which are located on, operating in or transiting through the HN's territory"*¹.

We believe that for all NATO member countries, and therefore for our country, participation in military activities led by the Alliance urges the military personnel operating in logistics field to have a profound knowledge of all aspects of providing HNS. The growing number and the increasing dimensions of these military activities from one year to another have made it important to each member state to assume the related to the Host Nation status. In all NATO textbooks and publications, the Host Nation Support concept was designed in a rigorous manner, and its implementation in the North Atlantic Alliance-Host Nation and Host Nation-Visiting Nations relations is done without errors, precisely because all NATO members know very well and apply the concept exactly just as it is.

It is obvious that logistic support will have a significant contribution to the success of military action, so HNS planning must be done simultaneously with the development of operational plans².

The first step in the effective planning of HNS is to receive the Host Nation Support Request (HNS REQ) for a military activity (joint operation or multinational exercise) from authorized structure of the foreign armed forces.

¹AJP-4.5 (A) *Allied Joint Doctrine for Host Nation Support*, Edition B, Version 1, Brussels, May 2013, p.13.

² Gheorghe Minculete, *Sprrijinul Națiunii Gazdă-obiectiv prioritar al logisticii armatei. Capabilități și facilități logistice ce pot fi puse la dispoziția forțelor NATO*, Military Logistics, Transformation and Remodeling, Bucharest, National Defense University „Carol I” Publishing House, Bucharest, 2006, p.4.

The NATO Doctrine states that the obligatory steps to be taken in the process of planning the HNS to ensure development of a robust support and to meet all the needs of the military activity are as follows:

- *Stage 1*: Submission of HNS-REQ and development of the Memorandum of Understanding (MOU);
- *Stage 2*: Development of the Concept of Requirements (COR);
- *Stage 3*: Development of the Statement of Requirements (SOR);
- *Stage 4*: Development of the Technical Arrangement (TA) for provision of HNS;
- *Stage 5*: Development of Joint Implementation Arrangements (JIAs)³.

Only by completing all these stages can be made a correct and complete planning of the HNS for foreign military forces participating in military activities on Romanian territory.

NATO states that the following principles must be respected: *responsibility, provision, authority, cooperation, coordination, economy, visibility, and reimbursement* in order to plan and provide HNS as efficiently as possible. NATO strategies state that the including these principles into the planning for HNS will not guarantee success, but will establish a solid foundation for the provision of a constructive HNS plan⁴.

Below, is presented a short description of these eight principles of planning and providing Host Nation Support⁵:

a) *Responsibility* is a principle that Host Nations, Visiting Nations and NATO commanders have collective responsibility for providing HNS, and do not exclude the responsibility of each nation for the support of their own troops;

b) *Provision* is a principle according to which the Host Nations must ensure logistical requests made by the Visiting Nations pursuant to national law and in accordance with national priorities and available resources, individually or through collective arrangements;

c) *Authority* is a principle that empowers the NATO commander with the necessary competence to plan, develop and execute the HNS, but does not affect the right of the Visiting Nations to negotiate and conclude bilateral agreements with Host Nation;

d) *Cooperation* between Host Nations, Visiting Nations and NATO authorities in providing HNS is a mandatory principle not only to eliminate competition for resources which are more difficult to find, but also to optimize the logistic support that Host Nation may make it available to facilitate the accomplishment of the mission;

e) *Coordination* the planning and providing of the HNS between foreign Visitor Forces and local authorities is an essential principle for increasing operational effectiveness and efficiency of military activity and avoiding competition for resources. It must be done at the appropriate levels and may include non-NATO nations, international organizations (IOs), governmental organizations (GOs), non-governmental organizations (NGOs), etc.

f) *Economy* is the principle that the planning and providing HNS must be made through making the most efficient and economical use of available resources;

g) *Transparency* is a principle which states that all information about the providing HNS must to be available to the commander of NATO forces and to Visiting Forces;

h) *Reimbursement* may be made from national, multinational or common NATO funds. The funds to be paid for the HNS will be determined via negotiations between the Host Nation and the Visiting Nations or the NATO command, and the reimbursement procedures will be drawn up in accordance with the mutually accepted principle that each party can only impose something on its own and cannot impose anything else to other party.

³AJP-4.5 (A) *Allied Joint Doctrine for Host Nation Support*, Edition B, Version 1, Brussels, May 2013, pp. 31-38.

⁴*Ibidem*, pp. 14-16.

⁵*Ibidem*, pp. 1-2.

The amount of the sums charged to the foreign armed forces in return for providing the HNS shall be determined in accordance with the provisions of the national law of the Host Nation, but excluding any associated personnel costs and any additional fees or commissions nor to exceed the costs for its own forces.

Verification by all parties will help to ensure that the Host Nation asks for fair prices to all the receivers of supplied goods and services.

By accessing local resources, the necessary time to bring these resources from the nations' places of origin to the Joint Operations Area has been eliminated, which gives combat operations more flexibility and leads to a considerable decrease of time required for troops participating in military activities dislocation.

It follows that the main purpose of HNS is to facilitate the performance of missions within the Alliance, diminishing their dependence from material, logistics side of exercises or operations⁶.

The absence of agreements designated for providing HNS on certain areas, or the failure to reach agreements with the troops of contributing nations, or the total or partial absence of resources or capabilities of the Host Nation needed for forces in the JOA (Joint Operation Area) lead to certain constraints or limitations in providing the HNS.

The HNS is the foundation of global support. NATO countries, widening HN support capabilities, can greatly ease the burden on NATO's leadership in developing a viable logistic support concept⁷.

This type of logistical support for the multi-national military activities, applicable to both Article 5 and non-Article 5 scenarios, is an option that requires well-founded, clear and precise regulatory rules and needs to be carefully planned, organized, conducted and implemented by highly trained staff in this field, involving a significant volume of all areas of logistical support.

When NATO-led military activities involve mobility, flexibility, and multinational commitment, it is essential that logistical support to be flexible and adaptable, capable of supporting and transporting all participating forces in all required locations throughout all stages military activity.

2. Host Nation Support in Romanian approach

The HNS concept has been known and applied since first participations of the Romanian military structures in applications, exercises and other multinational activities together with the NATO member states.

In Romanian legislation on planning and providing the HNS, it is stipulated that the concrete situations in which this kind of logistical support is provided are the following:

- a) Military operations within the concept of collective defense;
- b) Crisis Response Operations (CROs), including Peace Support Operations (PSOs);
- c) Transit Operations;
- d) Military Operations within ad-hoc coalitions;
- e) Emergency Assistance Operations;
- f) Establishment from peace time of battle and/or logistic support capabilities belonging to NATO or strategic partners;
- g) Establishment of NATO Headquarters;

⁶ Vasile Popa, *Sprîjinul națiunii-gazdă*, National Defense University "Carol I" Publishing House, Bucharest, 2006, p. 11.

⁷ Gheorghe Minculete, *Sprîjinul Națiunii Gazdă-obiectiv prioritar al logisticii armatei. Capabilități și facilități logistice ce pot fi puse la dispoziția forțelor NATO*, Military Logistics, Transformation and Remodeling, National Defense University "Carol I" Publishing House, Bucharest, 2006, p. 1.

h) NATO-led bilateral or multinational military exercises⁸.

Thus, the responsibilities involved through the accession of Romania to North-Atlantic Alliance have gradually led to the accumulation of experience in this field and thus to the enhancement of planning and providing HNS capacity of our country for the forces involved in multinational military activities on our national territory under the leadership of NATO.

According to the commitments as a NATO member, Romania has the following *responsibilities*⁹ in terms of planning and providing HNS:

- a) To create a favorable legislative framework in order to provide the best HNS for foreign armed forces participating in military activities on national territory;
- b) To provide the necessary advice to the representatives of foreign armed forces in all potential areas of HNS;
- c) To ensure coordination between the military and the civilian fields in order to appropriately provide HNS;
- d) To provide the access to the national resources on Romanian territory for the foreign armed forces participating in military activities, in accordance with national legislation;
- e) The Romanian logistic military structures and specialized structures of the Allied Armed Forces plan jointly the national resources needed to support the foreign troops on the national territory;
- f) To provide specialized assistance in financial and procurement fields;
- g) To provide liaison personnel on the line of providing HNS to the foreign armed forces participating in military activities on national territory;
- h) To collaborate permanent with NATO Commands and Sending Nations during planning and providing HNS processes.

By activating the Management System for HNS of Romania, the military and civilian's structures, as well as the military and civilian decision and executive factors, participate in the process of planning and supporting the specific activities for providing HNS to the foreign armed forces carrying out military activities on the national territory.

The Romanian management system of the HNS is comprised of both military and civilian components and consists of:

- Inter-ministerial Commission for Relations with Foreign Armed Forces;
- Coordination Committee for HNS of the Defense Staff (CC-DS-HNS);
- Cell for planning and providing HNS during the exercise;
- The structures dedicated to logistic support in Ministry of National Defense and civil entities designated for supplying goods and services;
- Relationships established between the components of the system during the planning and execution of the HNS specific activities¹⁰.

The management and coordination of the public authorities' activities in our country aimed at facilitating military activities carried out on Romanian national territory by the foreign armed forces shall be done by Inter-ministerial Commission for Relations with Foreign Armed Forces.

In Romania, the regulatory, planning and coordination authority of HNS is represented by the Ministry of National Defense as an integrator of the specific activities in this field, and

⁸ *Concepția și procedurile specifice privind acordarea de către România a sprijinului națiunii gazdă (HNS) pentru acțiunile militare ale statelor membre NATO și parteneri pe teritoriul național*, revised edition, approved by the Decision of the Supreme Council of National Defense no. 102/2010, art. 28, p. 12.

⁹ *Ibidem*, art. 33, p. 14.

¹⁰ *Ibidem*, art. 62, p. 23.

the unique contact point at national level regarding the HNS is the Logistics Directorate from the Defense Staff¹¹.

For providing an effective logistic support to the foreign armed forces following the request of their representatives, the Romanian Ministry of National Defense can supply products from its own stock, provide services from subordinated specialized structures or buildings, storage facilities and prepositioning facilities from ministry's patrimony for rent, according to national legislation.

The conditions under which such goods and services will be contracted, and specialized assistance in contracting products and services will be provided, and the movable or immovable assets necessary for foreign armed forces participating in military activities on national territory will be rented shall be stipulated in the MOUs and the TAs.

For the materials and services provided, the Romanian logistic support structure cannot be obliged to assume other guarantees than those provided by Romanian or international law.

Conclusions

Currently, the national interest in assuring its own security coincides and is subordinates to the objectives of the North Atlantic Alliance. In this respect, the structural and functional modernization of the state bodies and economy in order to transpose the country's national security programs into applicable standards, requires appropriate standards in line with the Alliance and European Union strategies, taking into account the specific features and characteristics of the modern warfare¹².

The HNS, a functional logistics domain considered until the mid-1990s as a non-essential part of organic logistic support, is nowadays a key element in supporting NATO's new structures.

Military practice of the recent years has shown that HNS is an important factor in any operational scenario or military exercise and is also a solution for increasing the efficiency of logistics support activities.

This kind of logistic support is giving to the foreign forces participating in military activities on the Romanian national territory the mobile, flexible, multinational and common character.

The planning and providing of the HNS is a very important part of the logistic support necessary for the foreign armed forces participating in any kind of military activity taking place on the national territory of Romania.

Our country, through specific national legislation, provides the Allied Armed Forces with the alternative of using the resources in military activities area under the same conditions as for its own armed forces.

As a final conclusion, according to North Atlantic Treaty Organization vision, providing of Host Nation Support for foreign allied military forces within the national territory of a Host Nation plays an essential role in gaining decisive advantages over the forces of the opponents and is an extremely important factor in the scenario of any military activities.

¹¹ *Ibidem*, art.11, p. 8.

¹² Gheorghe Minculete, *Abordări moderne ale managementului logistic*, 2nd edition revised and added, National Defense University "Carol I" Publishing House, Bucharest, 2015, p. 119.

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DIRECT PARTICIPATION IN HOSTILITIES IN INTERNATIONAL LAW

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Abstract: *Direct participation in hostilities is not limited to the personnel of the armed forces; as such, numerous dispositions of international military law refer to the possibility that civilians be attracted in the sphere of military operations. In this case the civilians lose their protection as civilians and eventually gain the protection reserved to war prisoners as combatants. Such civilians could include the persons that accompany the armed forces, without being a part of these forces (e.g. civilian military crew members, war correspondents, commercial navy or aviation crew members as well as the population which spontaneously takes up arms to repel an invading enemy). The ambiguity of the expression „direct participants to hostilities” as well as the apparition of new categories of combatants such as members of private military and security companies have led to the emergence of doctrinal and jurisprudential specifications in this field.*

Keywords: *Direct participation in hostilities, Geneva Conventions and Additional Protocols, international humanitarian law, civilian, protection.*

Preamble

Expanding on established definitions¹ of international humanitarian law – as “the entirety of international legal or customary rules that regulate the humanitarian problems that arise directly from international armed conflicts as well as from internal armed conflicts” –, it is evident that one of the main goals of international humanitarian law (as follows IHL) is the protection of civilians.

The protection of civilians can be accomplished by making the parties to an armed conflict to observe a simple set of rules which ultimately have roots in the fundamental principles of international humanitarian law prohibiting any form of violence to life, as well as torture or cruel, inhuman or degrading treatment.

Thus IHL obliges the parties to an armed conflict to distinguish, at all times, between the civilian population and combatants and to direct operations only against military targets. It also provides that civilians may not be the object of deliberate attack. Last but not least, humanitarian law requires that civilians must be humanely treated if and when they find themselves in the hands of the enemy.

The protection of civilians was however, historically, not a major preoccupation for international actors. That is because war, at that time, was “reserved” for armies and military personnel and as such the “normal people” were overlooked. Often seen as a “privilege” of

¹ E.g.: Ion Dragoman, David Ungureanu, *Tratat de drept international umanitar*, Editura Universul Juridic, București, 2018, pp. 28-29; Hans-Peter Gaser, *International Humanitarian Law –An introduction*, in: HAUG (Hans), *Humanity for all*, Henry Dunant Institute, 1993, p. 509.

the combatants², the direct participation in hostilities is not limited to the military personnel of the armed forces. As such many provisions of the instruments of international military law refer to the possibility that civilians may be drawn into the sphere of military actions, in which case they lose their protection as civilians, possibly benefiting from the treatment reserved for combatants and specific to war prisoners. According to article 4 of the 4th Geneva Convention of 1949 (as follows, GC (IV))³ this situation is applicable to the persons accompanying the armed forces without being directly involved in them (e.g. civilian members of the military crew, war correspondents, suppliers, labor units or services in charge of the welfare of the armed forces etc.), members of the navy and civil aviation crews as well as the population which spontaneously takes up arms during an invasion to combat the enemy.

Reaffirming and strengthening these rules, The 1st Additional Protocol to the Geneva Convention of 1977 (as follows AP(1)GC⁴), refers to participation in hostilities in articles 41 to 47, establishing in article 51.3 that civilians are protected only if they do not participate in hostilities. Similarly, the 2nd Additional Protocol to the Geneva Convention of 1977 (as follows AP(2)GC⁵), states in article 13.3 that civilians shall enjoy protection only if they do not take part in hostilities; this lack of protection ends at the same time that the civilian ceases to take part in the hostilities (so-called “revolving door” of civilian protection). In the case of non-international armed conflicts the situation is extremely complex because it does not explicitly refer to the combatants but only to dissident armed forces or to organized armed groups. The ambiguity of the expression “direct participants to hostilities” as well as the appearance of private owned military or security companies have led to doctrinal and jurisprudential specifications in this field.

It is very important to note that the roots of regulating direct participation and the protection of civilians can be located, according to the International Committee of the Red Cross (as follows, ICRC), in „wars of national liberation in which government forces faced off against “irregular” armed formations fighting for the freedom of colonized populations”⁶ and „armed conflicts not of an international character waged between government forces and organized non-state armed groups, or between such groups, for political, economic, or other reasons”⁷. The historical development of the said regulations is thus important for the correct understanding of the reasoning and wording present today and for better future ruling.

1. Some clarifications made by courts or theorist

Direct participation in hostilities was a matter of life and death in wartime and as such enjoyed multiple solutions during history. Almost 400 years ago, Hugo Grotius⁸ wrote that in

² According to article 43 of the P(1)GC, Combatant privilege, namely the right to directly participate in hostilities with immunity from domestic prosecution for lawful acts of war, is afforded only to members of the armed forces of parties to an international armed conflict (except medical and religious personnel), as well as to participants in a *levée en masse*.

³ *Convention (I) for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field*, Geneva, 12 August 1949, available online at: <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/INTRO/365?OpenDocument>, accessed on November 02, 2018.

⁴ *Geneva Conventions of 1949 and Additional Protocols, and their Commentaries*, International Committee on the Red Cross (ICRC), available online at: <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/vwTreaties1949.xsp>, accessed on November 01, 2018.

⁵ *Ibidem*.

⁶ Nils Melzer, *Interpretative guidance on the notion of Direct participation in hostilities under international humanitarian law*, ICRC, p.5, available online at: <https://www.icrc.org/eng/assets/files/other/icrc-002-0990.pdf>, accessed on November 02, 2018.

⁷ *Idem*, p. 6.

⁸ Hugo Grotius, *The rights of war and peace*, 1901 ed., available online at: <http://oll.libertyfund.org/titles/grotius-the-rights-of-war-and-peace-1901-ed>, accessed on November 02, 2018.

international law, the target of the belligerents is the adversary in his entirety of people and property but it is forbidden to attack „innocents” (this category included women, children, priests and monks, farmers, merchants and prisoners).

In this regard a very brief overview of his work should be presented. His magna opera *De jure belli ac pacis* was published in 1625 and had a great influence on the practices of war which up until then were based on customs. The sources of his work were first: the principle of natural morality – just orders written directly by God in the hearts of men – named by him “natural law”, second: institutions, ideas, decisions held or made by nations or gifted men and considered by them as just, fair and right – named by him “society law”. Society law was different from natural law but it combined with the latter⁹.

Grotius’ thinking was born from the basis of humanizing the war. The Dutch thinker went even further and suggested the complete elimination of war from society. He also insisted that there was such a thing as a „law of war” which directly applied to the belligerents on the basis that all actions, even war, had to be based on justice and good faith. It is evident to see how the idea of a law of war was immediately beneficial to all parties and as such how this concept was widely embraced and applied. The first great European peace congress – The Westphalian Peace of 1648¹⁰ imposed, amongst others, the principle of European balance – his concept – just 3 years after his death.

Later, the „popular” war of Clausewitz¹¹ as insurrectional violence aimed against civilians no longer distinguished between combatants and „peaceful” civilians because from among the latter were recruited partisans, guerilla fighters or resistance terrorists who supported one of the war parties; the doctrine of the „people’s war” is relevant up to this day and it does not make any notable distinctions between direct participants in hostilities and those that only support the war effort due by every citizen. This how in the XXth century the theory of the „total war” gained grounds, a theory which supported the idea that war was no longer reserved to the combating forces but by means of the mandatory military enlisting touches the very soul and life of each and every citizen of belligerent nations. From the total war to the „terrorist war”, a concept which violates every rule of civilized warfare and of international humanitarian law, was only a step.

The authors of international military law books show that the notion of "active participation in hostilities" was introduced by the joint article 3 of the Geneva Conventions of 1949, being developed by both Additional Protocols of 1977, referring, in the case of international conflicts, to the situation of individuals who use weapons in a spontaneous, sporadic and unorganized manner such as the case of resistance fighters in occupation time. In contrast, in non-international conflicts, as evidenced by numerous specialized papers, the number of which has dominated the war arena for several decades, there is no clear definition of combatants and civilians, so that interpretations of direct participation in hostilities jeopardize the protection and security of information.

Jurisprudential references to this reality have been made especially in the Tadic, Martić and Galić cases at the International Criminal Tribunal for the former Yugoslavia¹² and

Also, Hugo Grotius, *De jure belli ac pacis*, available online at: <https://lonang.com/library/reference/grotius-law-war-and-peace/>, accessed on November 02, 2018.

⁹ *Ibidem*.

¹⁰ Which in short ended the Thirty Years War – a civil war inside the Holy Roman Empire -, which started with an anti-Habsburg revolt in Bohemia in 1618 but actually concluded with the signing of two treaties between the empire and the new great powers, Sweden and France, and settled the conflicts inside the empire with their guarantees.

¹¹ Carl von Clausewitz, *On war*, trans. COL James John Graham, N. Trübner, London, 1873, available online at: <https://www.clausewitz.com/readings/OnWar1873/TOC.htm>, accessed on November 02, 2018.

¹² Official website of the International Criminal Tribunal for the former Yugoslavia, available online at: <http://www.icty.org>, accessed on November 02, 2018.

the International Court of Justice which, in the Consultative Opinion on the Legality of Nuclear Weapons¹³, stated that the states are obligated to not make civilians the object of attacks and, therefore, to never use weapons that do not distinguish between civilians and military targets. If the lawfulness of a civilian attack in the war depends on their own behavior during hostilities, then the exact determination of what is meant by "direct participation in hostilities" is an important task of doctrine and International humanitarian law jurisprudence. This task was assumed by the International Committee of the Red Cross, which adopted in 2009 the "Interpretative Guidelines" in this area.

2. The interpretative guidance on the notion of direct participation in hostilities under international humanitarian law

As a result of research carried out by a group of experts between 2003 and 2008 under the aegis of ICRC, this document contains 10 recommendations accompanied by an equal amount of comments, without the intention of changing the conventional International humanitarian law rules but reflecting the ICR's institutional position on how the current law can be interpreted in the light of recent trends in current armed conflicts.

This document was constructed on the foundation of a variety of sources, amongst which, besides the conventional and customary principles and provisions, were observed the preparatory work on International Humanitarian Law (IHL) treaties, international jurisprudence, military manuals, and standard legal doctrine. Reflecting the unanimous or majority views of the 40-50 academic, military, governmental and non-governmental experts who have debated this issue in Hague and Geneva, the Interpretative Guidelines of the ICRC are not an international treaty but a persuasive recommendation for states, non-state practitioners actors and theorists of the IHL, resulting from a comprehensive legal analysis that harmonizes the military and humanitarian interests for those responsible for the leadership of military hostilities.

The object of the *first* recommendation of the Interpretative Guidelines is to define the concept of civilian in international conflicts, the *second* aims to define the specific of civilians in non-international conflicts and the *third* the situation of privately owned contractors (suppliers) and civil servants. The *fourth* recommendation defines "direct participation in hostilities" as a specific act of individuals to intervene in the hostilities between belligerents of armed conflict, after which the *fifth* indicates the following elements of this act: a) to be done to harm military operations or combat ability of a party to the conflict or to cause death, injury or destruction of persons and property protected from direct attacks; b) there is an existing direct causal link between this act and the possible damage that will result from its commissioning or coordination with the military operation of which it forms an integral part; c) it must be intentionally intended to directly cause damage to a party to the conflict in favor of the other party (nexus-belligerence). The *sixth* recommendation refers to the commencement and termination of direct participation while the *seventh* refers to the application of the loss of protection over time. The last recommendations state the preconditions and assumptions in case of doubt (*eighth*), the use of force in the direct attack (the *ninth*) and the consequences of regaining civil protection (*tenth*).

In the comments to the ten recommendations it is stated that if the expression "direct participation in hostilities" leads to the loss of protection against direct attack, then it must mean that there also is an "indirect" participation in hostilities for which this protection is not lost, as is the case for activities that are a part of the general war effort or warfare, to which all

¹³ *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, I.C.J. Reports 1996, p. 226, available online at: <https://www.icj-cij.org/files/case-related/95/095-19960708-ADV-01-00-EN.pdf>, accessed on September 27, 2018.

citizens of the parties to the conflict are bound by domestic laws. This is the case for the design, manufacture and delivery of military weapons and equipment, the construction and repair of roads, ports, airports, bridges, railways and other infrastructures, in the context of specific military operations (which are part of the general war effort), in the case of propaganda, financial, non-military agricultural or industrial production (embedded in political, economic and media support for the war); it is admitted that such "indirect" activities are indispensable for causing damage to the enemy but, unlike the direct participation that materializes these damage in hostilities, they only participate in creating the ability to produce them without having a direct connection (nexus) with belligerence itself. Only the criterion of direct, temporal and geographical proximity can distinguish between direct and indirect participation in hostilities, with all their consequences.

3. Organized armed groups and the statute of combatant in non-international armed conflicts

One cannot view organized armed groups and the statute of combatant in non-international armed conflicts without first looking at the exceptions, civilians and private contractors.

ICRC concluded that the concept of civilian is a negative one and it is negatively delimited by the definitions of armed forces of a party in conflict and participants to a "levée en masse". Therefore civilians are not armed forces or "levée en masse".

According to article 41.1 of the P1GC, armed forces comprise all organized armed forces, groups and units which are under a command responsible to that party for the conduct of its subordinates.

The recommendations view armed forces in a broader spectrum than that of the Hague Regulations and the Geneva Conventions¹⁴. "As such all armed actors showing a sufficient degree of military organization and belonging to a party to the conflict must be regarded as part of the armed forces of that party"¹⁵.

These armed forces must belong to one of the parties of the conflict. If they do not they could be civilians (according to the Hague regulations, Geneva conventions and P1GC) or parties to a separate non international armed conflict under the IHL governing these conflicts.

„Levée en masse” basically refers to inhabitants of a non-occupied territory who, on the approach of the enemy, spontaneously take up arms to resist the invading forces without having had time to form themselves into regular armed units, provided they carry arms openly and respect the laws and customs of war. Therefore they are essentially civilians but due to their participation they are not to be treated as civilians. All other persons who directly participate in hostilities on a merely spontaneous, sporadic or unorganized basis must be regarded as civilians.

According to ICRC¹⁶, all persons who are not members of state armed forces or organized armed groups of a party to the conflict are civilians and, therefore, entitled to protection against direct attack unless and for such time as they take a direct part in hostilities. In non-international armed conflict, organized armed groups constitute the armed forces of a non-state party to the conflict and consist only of individuals whose continuous function it is to take a direct part in hostilities ("continuous combat function"). The latter should be

¹⁴ Armed forces are required to have a responsible command, have fixed distinctive sign recognizable at a distance, carry arms openly and operate in accordance with the laws and customs of war. See Nils Melzer, *op. cit.*, pp. 25-26.

¹⁵ *Ibidem*, p. 26.

¹⁶ Nils Melzer, *op. cit.* p. 36.

addressed for better understanding of the concept involved. Belonging in, or membership to, an organized armed group is best determined by looking at whether a person assumes a continuous function for the group involving one's direct participation in hostilities i.e. continuous combat function. Continuous combat function requires lasting integration into said organized armed group and may be openly expressed through the carrying of uniforms, distinctive signs, or certain weapons. It can also be determined on the basis of conclusive behavior of the person involved (such as one's exact participation to the conflict or one's exact conduct).

The ICRC analyses¹⁷ the situation of private contractors and civilian employees in the case of international armed conflict and of non-international armed conflicts. Private contractors and civilian employees must be incorporated or enlisted in the armed forces in order to be awarded combatant privilege. However, because of the natural development of society and thus armed conflicts in general, it is becoming increasingly difficult to operate the distinctions that were made 10-15 years ago.

In non-international armed conflicts (as follows NiAC), conventional rules have not defined combatant status, referring only to civilians, armed forces and organized armed groups; the motivation lies in the *de facto* situation that in this kind of conflict the belligerent parties do not recognize each other in order to not give the other party the benefit of the status of the prisoner of war; governmental forces claiming that they are fighting terrorist attacks against the constitutional order while rebels reduce the role of the governmental servicemen to simple "instruments" of an "odious regime". In trying to regulate the situation of civil wars, P(2)GC refers to armed hostilities carried out on the territory of a State between, on the one hand, its armed (governmental) forces and, on the other hand, armed dissident forces or armed groups under the leadership of a responsible command which exercises such control over a part of the territory of that State so as to enable it to carry out sustained and coordinated military operations and to apply the rules of P(2)GC; within the governmental armed forces one can also include, as stated in article 43 of P1GC, the organized armed groups which are put under a centralized command a command which is responsible for the conduct of the subordinates towards the government, even if such command is not recognized by the opponent. And the joint article 3 of the Geneva Conventions refers to persons not participating in hostilities, including members of the armed forces who have deployed weapons and persons who have been taken out of combat.

In this particular situation of civil conflicts, determination of direct participation in hostilities is made on the basis of common article 3 and P(2)GC but also of domestic military law, with relevance on the right to war, because the definition of aggression includes the support of „gangs” which invade the territory of a state. In this respect, the second recommendation on the concept of civilian in NiAC of the Interpretative Guidelines of the ICRC in 2008 considers that the armed groups include both dissident armed forces (since in this situation they are fighting the Government) and „other organized armed groups” which recruit their members from among the civilians; one can say that the expression „organized armed groups” refers, in the case of NiAC, to the military wing of the insurgency (rebellion, secession) political movement against the government, meaning “armed forces” in a functional and not conventional sense, with a status similar to that of combatants in international conflicts, totally opposed to the status of the civilian which by not participating to hostilities is entitled to the protection offered by the IHL. In conclusion, in NiAC, organized armed groups constitute the "armed forces" of the rebels, and they consist only of individuals who take part directly in hostilities by carrying out fighting / warring functions of a repetitive nature.

¹⁷ *Ibidem*, pp. 39-40.

Of course, in order to be able to gain the statute of a combatant, the organized armed groups must be in the command of a responsible commander, they must exercise such control over a part of the territory of the state that would allow them to carry out sustained and coordinated military operations and to apply the provisions of P2GC. Because these are cumulative conditions, if one is not met then we cannot speak of organized armed groups that provide its members with the status of combatant. This is the case of terrorist groups which, despite having a political-military leadership and controlling a part of the state territory by conducting coordinated military actions, have no respect, on the contrary, for the laws and customs of war, resembling not the state armed forces but with organized criminal groups that have to be prosecuted and sanctioned for their war crimes. In a special situation we also find the privately owned military and security companies which, unlike the licensed suppliers and the civilian employees of the armed forces, do not yet have a precise status of their direct participation in hostilities.

4. Military objectives seen as a reflection in property of the statute of combatants

Defining the status of combatants is not only meant to specify their rights and obligations in times of armed conflict but also to distinguish them from civilians who cannot be attacked, their definition being negative in the sense that civilians are non-combatants. This is the situation with regard to persons, the differentiation applicable to goods /property follows the same logic of a negative definition. As such civilian property (or the goods of a civilian), which cannot be attacked, is considered all the property which is not a military objective, the latter being defined in a positive sense as those goods which, by their nature, location, destination or use, make an effective contribution to military action and whose total or partial destruction, capture or neutralization in the context of military hostilities, gives belligerents a precise military advantage. The resemblance of logic between persons and goods results clearly and without doubt from the provisions of article 52.2 which uses the words “with regard to goods” in specifying the definition of military objectives, it being understood that “with regard to persons” only combatants are military targets. The logic of defining the fundamental categories of persons and goods in time of war is essential to ensure the general protection against hostilities in the fundamental rule expressed in Article 48 of the P1GC: “In order to ensure the respect and protection of the civilian population and property civilians, the parties to the conflict must always distinguish between the civilian population and combatants, as well as between civilian assets and military objectives, and consequently direct their operations only against military objectives”. In this way, military objectives arise as a reflection of the status of the combatants.

Before making a few brief statements on military objectives, it is worth mentioning that the distinction between civilians and combatants is based on the principle which was conventionally stated for the first time in the Declaration of St. Petersburg of 1868 to be repeated later in numerous instruments of international law applicable to international armed conflict, such as the Regulation of the 4th Hague Convention of 1907, Protocols II and III of the 1980 Geneva Convention on Conventional Weapons, the Ottawa Convention on the ban on antipersonnel mines and the Statute of the International Criminal Court, which defines war crimes as intentional attacks against the civilian population that does not directly engage in hostilities. Many national military manuals and jurisprudence have thus considered that the principle of distinction is one of the IHL’s “cardinal principles” as well as one of the “transgressive principles” of customary international law, a valid appreciation for non-international armed conflict if we take into account both the traditional approaches (Article 13 of P(2)GC, but also the conventions on conventional weapons and mines as well as the ICC Statute) as well as doctrinal and jurisprudential ones. On these conventional, doctrinal and

jurisprudential bases, the list of customary IHL rules¹⁸ also include Rule No. 7 applicable to both international and non-international armed conflict which states that parties to the conflict must always make a distinction between goods with civilian character and military objectives. Attacks can only be directed against military objectives. Attacks must not be directed against property of a civilian character. The customary character of this rule has the significance that it applies to all states of the world, whether or not they are parties to the Hague and Geneva Conventions. And the negative definition in Rule No. 9 of civilian assets, as being all goods that are not military objectives, obliges to detail the characteristics of the military objectives.

According to the Dictionary of international law of armed conflict¹⁹, a military objective is an asset which by its nature, location, destination or use, make an effective contribution to military action and whose total or partial destruction, capture or neutralization in the context of military hostilities, gives belligerents a precise military advantage; the same dictionary defines military advantage as the term used by the Law of armed conflicts to define the precautions one must take in order to ensure that the minimum amount of damage is suffered by the civilian population and its goods. The above definitions are based on articles 51, 52 and 57 of the P(1)GC which forbid any attacks which run the risk of incidentally causing loss of human life or bodily harm in the civilian population, the loss or damage of civilian property or a combination of the above mentioned, negative effects deemed excessive in view of the military advantage effectively gained and /or expected to be gained.

Clarifications on the terms used to define military objectives are also made in the comments written by the ICRC on the additional protocols to the Geneva Convention²⁰. Thus, according to the criterion of the *nature* of the assets, military objectives are considered to be all goods used directly by armed forces, such as weapons, equipment, means of transportation, fortifications, warehouses, buildings housing armed forces, military staff, command centers etc. According to the criterion of *placement*, military goods are also those assets which, without being of a military nature, contribute effectively to the military action such as bridges or other similar constructions, or certain areas which are of significant specific importance for military operations (as a deterrent – an obstacle for the adversary or an advantageous position); for example gorges, bridge heads or strategic points, passages and heights. The *destination* criterion refers to the future use of a good and the criterion of *use* to its current function during the war; civilian goods by their nature can be turned into useful goods for the armed forces; such is the case with a school or a hotel which, by using the room for military or commando accommodation, become military objectives, but also the case of mixed objectives of value for both the civilian and the military, which could include many of the services and the industries of a belligerent country, in which case the criterion of the *precise military advantage* applies. Defining it is not only the result of a comparison between the losses/ damages to civilian /military property not only a comparison of civil/military losses/damages, but also by avoiding incidental civilian casualties and losses that would be excessive²¹ in relation to the real and direct military advantages expected according to the specific circumstances of the attack; as such attacks that offer only unprecise or possible advantages are deemed unlawful and dismissed as reckless.

Anyway, the philosophy of the texts inscribed in P(1)GC which was the result of intense negotiations between the participants of the 1974-1977 convention, is applied

¹⁸ *Customary law*, vol. 87, no. 857, International Revue of the Red Cross, March 2006, available online at: <https://www.icrc.org/en/international-review>, accessed on November 02, 2018.

¹⁹ Pietro Verri, *Dictionary of the international law of armed conflict*, ICRC, Geneva, 1992, pp. 17-81.

²⁰ *Commentaire des Protocoles additionnels aux conventions de Genève*, Geneve, 1986, pp. 652 and the following.

²¹ The expression „losses and collateral damages”, originating from the United States of America (and the popular motion film) is widely used. It however lacks the precision of the conventional expression inscribed in P(1)GC.

differently in war zones and outside such areas. As such, in war zones one will frequently find constructions or installations, civilian in nature, but military through occupation or usage of the armed forces, which can be attacked as military objectives on the condition of avoiding excessive civilian property damage or losses – even if such losses or damages are only incidental. This is the reason behind instituting an assumption of civilian character of all assets because if the fighting takes place inside a settlement defended building by building, all of these ultimately and fatally become military objectives. On the contrary, outside war zones, the military character of the assets must be clearly and undoubtedly established and verified. This is why the belligerent which orders or executes an attack must have enough information at his disposal to check if the target is indeed a military objective and to ascertain the military advantage of the attack. In this regard lively debates during the conference proceedings were focused on the duty of the attacker to do everything possible in order to check if the targets are military objectives. A compromise was reached where the states agreed that the obligation mentioned implied to do anything feasible or practically possible according to the circumstances of the situation, including those related to the success of the operation without neglecting humanitarian obligations which in the end is a conduct of good faith in correlation with the principle of proportionality.

Proportionality, also deduced from admitting incidental losses/damages, refers to the accidental effects of attacks, the dangers to civilians and civilian property being caused by the situation (inside or near military objectives), by the land configuration (destruction, ricochets, floods etc.), by the accuracy of the weapons used (more or less dispersion of the trajectory, shooting distance, ammunition used, etc.), meteorological conditions (visibility, wind, etc.), of the particular nature of the military objectives concerned (ammunition depots, fuel tanks, means of communication of military importance in the immediate vicinity of dwellings, etc.) as well as the technical skill of the combatants (throwing bombs in a larger area to reach a certain objective). In order to establish a fair balance between humanitarian exigencies and implacable military needs, proportionality is never as precise as it would be, but it is a reasonable compromise between the contradictory interests of the belligerents and the war, a meritorious attempt to establish a few restrictions in a field that remained arbitrarily until 1977.

Let us finally point out that there are still different interpretations and practices on military objectives as a reflection of the status of combatants in goods²². Thus, the military manuals in Austria, Ecuador and the US consider that the anticipated military advantage may include the need to increase the security of its own or allied forces and that other states do not grant immunity to civilians working in ammunition factories. As regards to civilian / military dual-use goods, the definition of military objectives is generally considered to be the economic targets used to support military operations by giving the attacker a precise military advantage. However, it is essential to understand and apply the definition of military objectives not only for the combatants but also for their means and methods of war, for which their legal regime must be presented in detail, Rules 7-10.

Brief conclusions

Direct participation to hostilities is the basic rule enacted in IHL related to civilian protection in armed conflicts and is directly related to combatant privilege. In brief, that is to say that civilians that actively and directly take part in hostilities are eligible for combatant privilege and not civilian protection. Direct participation is neither a deterrent nor an incentive for participating in hostilities on the basis of potentially gaining protection reserved to

²² *Customary law*, vol. 87, no. 857, March 2006, *International Review of the Red Cross*, available online at: <https://www.icrc.org/en/international-review>, accessed on September 02, 2018.

combatants as opposed to being a civilian and being protected as such. This basic rule serves to ultimately distinguish between combatants and non-combatants and as such to protect them accordingly. It is evident that under IHL there are differences between participating to armed conflicts as opposed to being “innocent bystanders” but one must also take into account what the ICRC notes as a “resort to perfidy” as in the fact that civilians not openly carrying arms and being otherwise concealed act in a manner reserved to armed forces and moreover perpetrate hostile acts against protected persons or objects, deny quarter to adversaries hors de combat or capture, injure or kill an adversary. Thus civilian direct participation in hostilities is most certainly going to involve significant confusion and uncertainty in its implementation. One must note that in order to avoid the erroneous or arbitrary targeting of civilians entitled to protection against direct attack, one must take all necessary possible and feasible precautions. Most importantly, in case of doubt, the person in question must be presumed to be protected against direct attack. In conclusion, direct participation in hostilities is always to be seen in conjunction the fundamentals of IHL that are the protection of human life and the consequent prohibition of any form of violence to life, torture or cruel, inhuman or degrading treatment.

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CIVIL AND MILITARY COOPERATION – A STAKEHOLDER AMONG WORLD PEACE ACTORS

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Abstract: *Civilian-military cooperation is and will remain a reference instrument of building world's peace. Cooperation with civilians represents a challenge for all military personnel, both due to the differences in organizational culture of them, the more active military involvement in humanitarian projects and processes in support of the local population, and the political problems in working with government officials.*

In order to involve various entities in such cooperation, it is imperative to be proceeded personnel' training programs conducted both before and after the actions in theatres of operation. Knowing these aspects mentioned above, cooperation between military and civilians could lead to increased confidence, as well as the safety of local population and military force involved. Therefore, CIMIC specialized mission is to continuously grow as much as the number of those who understand that the multinational troops, in general, and Romanian troops, in particular, are there in their country (Iraq, Afghanistan, Kosovo) to bring peace and stability and to help in keeping the host population hope for a better future.

Therefore, the paper will present some elements supporting the main assumption, namely, CIMIC structures and personnel promoting peace and stability in the areas of operations.

Keywords: *civil-military cooperation, civilian actors, NGOs, local authorities.*

Introduction

The multidimensionality of the twenty-first century military actions, characterized by comprehensive planning, speed, surprise, mobility, dynamism, participation of exclusively professionalized forces, is reflected in their multinational and integrated approach. Also, this characteristic is emphasized in the expansion of the the military action environment, integrating in addition to the traditional dimension of the war (terrestrial, airborne, naval) the civil-military interactions with its major component, civil-military cooperation (CIMIC)¹.

Thus civil-military cooperation (CIMIC) is one of the main components of military action. In this case one should discuss about civil assistance or military assistance with the aim of rehabilitating the economy and of restoring the infrastructure of a nation. CIMIC is one of the fields in which the military institution is very involved, and where is required the need for cooperation with the central, local (civilian) authorities in the conflict areas or in the areas where natural disasters occurred.

¹Alexandru Troașcă, *Tactica unităților de acțiuni CIMIC, Tratat de știință militară*, volumul III, Editura Universității de Apărare, București, 2004, p. 454.

1. CIMIC in theory

To emphasize the importance of civilian-military cooperation, we focus on American General Dwight David Eisenhower words who considered 1944 was one of the moments that allowed the description of the tasks to be solved from the perspective of CIMIC capabilities. Thus, the American general Eisenhower said “*The sooner I can get rid of the questions that are outside the military scope, the happier I will be! Sometimes I think I live ten years each week, of which at least nine are absorbed in political and economic matters*”².

These assertions only strengthen, instill in the thinking of each of us, whether military or civilians, the fact that the relations of collaboration and mutual support must take precedence over the states of animosity or conflict. In order to create a stronger cooperation relationship between the civilian and the military fields, there have been a number of theories that have attempted to provide the most relevant response to the new security and environmental realities in which the CIMIC concept can be developed, including what could harm civilian-military relations. Thus, A. R. Luckham attempted to develop a typology of civilian-military relationships that would be based on three dimensions, namely:

- *Civil power* - in which institutions and organizations must be able to legitimize their own means of action, to resolve their own internal conflicts³;
- *The power of military institutions* - based on three types of resources: coercive and strategic, organizational (cohesion, professional capacity) and political;
- *The interaction between military power and civil power*.

The interaction between military and civilian power should be based on a *balance of power* between the civilian and the military component, but in the sense of some states’ politics, *the balance* is one of mutual weakness towards the more developed states, where the balance has a reciprocal power (Figure no. 1).

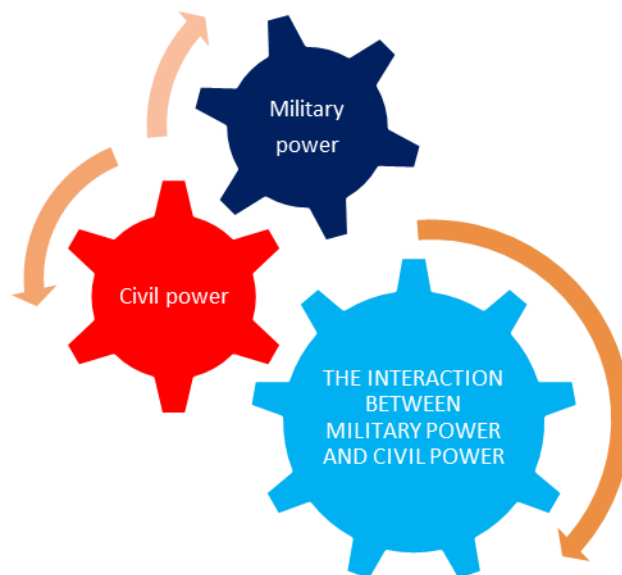


Figure no. 1: Interaction between military and civil power

The development of these theories, typologies in the context of recent international events involving various military actions have highlighted the importance of coordinating the

² J. P. Hobbs, *Dear General: Eisenhower's Wartime Letters to Marshall*, The Johns Hopkins University Press, 1979, p. 95.

³ Finer, in „The Man of the Horseback”, argued that army intervention in politics is not possible when political institutions are not developed and lacked legitimacy.

military and civilian component with international organizations (OIs), non-governmental organizations (NGOs) and private volunteers⁴.

Over time, the CIMIC concept and activities have had different approaches:

- During the Cold War was confused with the host nation support ideas;
- In the current geopolitical and geostrategic context, when the expansion of the process of globalization gained new valences, the CIMIC felt its presence in the whole spectrum of military operations, both in the collective defence - Article 5, and in the crisis response operations - non Article 5.

In both situations, commanders must acquire social, political, cultural, religious, economic, environmental, and humanitarian factors when planning and conducting military operations. In addition, it must relate as flexibly as possible to a large number of international and non-governmental organizations that have their own objectives, methods and perspectives, all of which need to be harmonized with those of the military forces.

Thus, it became necessary to define the civil-military cooperation expression in order to eliminate some confusion that existed when some military considered that CIMIC is necessary only in multinational operations, while others considered that CIMIC is necessary only in military operations on national territory.

Civil-military cooperation is a dimension of operations in which policy is conducted at strategic level, and implementation will be done at the operational and tactical level. It is considered to be in the responsibility of the commander, who will ensure the correlation of military actions with the requirements of military and civilian authorities, empowered to materialize the defence policies. The link between military and civilian agencies should be seen as a form of extended collaboration by identifying common interests and duplicated efforts as well as by resolving existing gaps by general retaliation measures. For example, the Italian forces, which had for a long time the military control over the southern Iraqi province, Dhi Qar (2007), had a CIMIC structure at the company level, which was tasked TO interact with civilian agencies in achieving the proposed goals.

The field of civil-military cooperation is quite extensive and requires a close link between the structure of defence policy and the legal structure. In the theater of operations, civil-military cooperation has an important role due to the need to obtain local resources, to act in a legal international environment and to facilitate the potential transition to civilian leadership. Below (Figure no. 2) is shown CIMIC place in civil-military relationships.

⁴ CIMIC activities are governed by a number of principles, of which the principle of communication proposes ways to optimize relations with civilian agencies, local authorities, international and non-governmental organizations, local population, etc., by effective, vital communication to maintain consensus and cooperation. See: *Allied Joint Publication 3.4.9, Allied Joint Doctrine for Civil-Military Cooperation*, Edition A, Version 1, NATO Standardization Agency (NSA), February 2013, pp. 3-5.

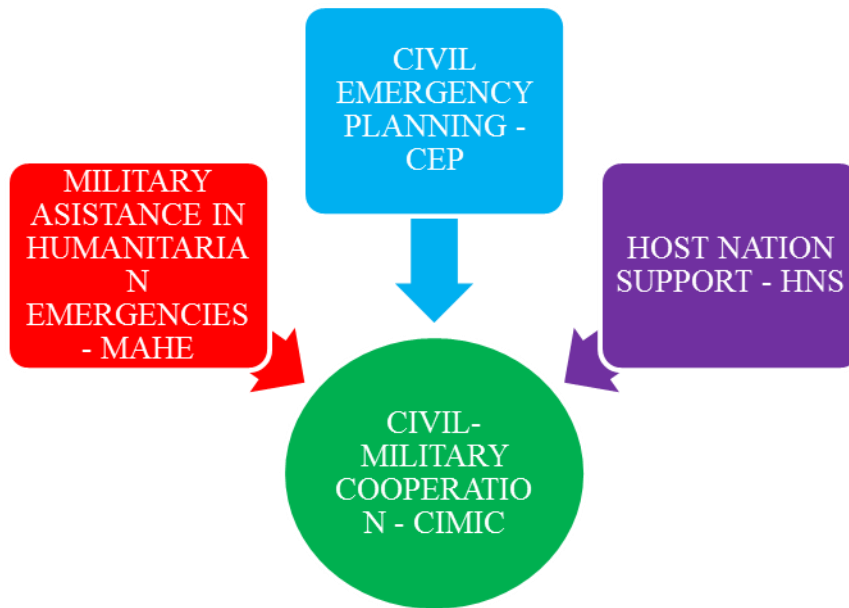


Figure no. 2: CIMIC place in civil-military relationships

As mentioned above, civil-military cooperation concept is quite extensive and to eliminate those confusion it is imperative to go from the real understanding of all its dimensions and implications.

*In the Romanian Ministry of Defence specialists' view*⁵, civil-military cooperation is a specific instrument of civil-military interaction for coordinating and cooperating in support of the mission between the military force commander and civilian actors, including the population and local authorities, and international, national and non-governmental organizations and agencies.

*In NATO specialists' view*⁶, civil-military cooperation represents all the actions and measures taken to achieve coordination and cooperation between military commanders and staff, on the one hand, and national and local authorities and civilian populations, international, non-governmental and private volunteer organizations, on the other hand.

*In the EU specialists' view*⁷, civil-military cooperation means specific tasks or activities carried out by EU forces, isolated or in partnership, with one or more civilian bodies, always in support of the commander's mission.

*In the UN specialists' view*⁸, the civil-military cooperation concept has a wider perspective, representing a mutual support relation, integrated planning and constant exchange of information, necessary at all levels, between military forces, humanitarian organizations and agencies acting for a purpose in response to a humanitarian emergency.

2. CIMIC Principles

The military world and the civilian element are deeply interdependent anywhere in the free world, and the complexity of this relationship has to do with the tremendous, sometimes painful transformation that the globe is suffering today - globalization, terrorism, climate

⁵SMG/P.F.A. – 53, *Manualul pentru cooperare civili – militari (CIMIC)*, Direcția operații, București, 2015, p. 9.

⁶Allied Joint Publication 3.4.9, *Allied Joint Doctrine for Civil-Military Cooperation*, Edition A, Version 1, NATO Standardization Agency (NSA), February 2013, p. 2-1.

⁷*EU Concept for Civil-Military Co-operation (CIMIC) for EU-led Military Operations*, Brussels, 3 February 2009.

⁸*Civil-Military Coordination in UN Integrated Peacekeeping Missions (UN-CIMIC)*, Policy, October 2010.

change, refugees, dictatorships. The relationship between civilians and military is more expressive than yesterday, primarily because the civilian world is no longer who it was, as neither the soldiers nor their commanders are not anymore who they were. Ultimately, these *public virtues* - democracy and freedom - are more *vulnerable*, more developed but more pertinent, more widespread but slightly influenced or even damaged. In addition, globalization in its expansive way instigates a series of new requirements that determines some concepts such as nation-state or security, defence or national destiny, culture, civil society, to become much more in our day than yesterday.

CIMIC principles will help governing the military direction of CIMIC as well as the civil-military relationship. The principles will guide the internally military process and underpin the effective civil-military relationships. Applying CIMIC principles will contribute to a comprehensive approach⁹.

In NATO perspective, main CIMIC principles are¹⁰:

- *understanding the context* and environmental awareness namely the diverse cultural context given by the operational environment's complexity, instability and unpredictability and the varying mandates, competencies and capacities of the different actors involved;

- *understanding the aims and objectives of the military and civil actors*, in terms of unity of effort with Civil-Military Liaison being the key aspect of CIMIC integrated activities, of synchronizing effects of civilian and military common action and of pursuing common goals although various CIMIC actors missions may differ;

- *operating within the law* i.e. fulfilling legal obligations and being humanitarian aware; *gaining respect and trust* by interaction to the host community with respect and trust, promoting transparency by avoiding poor communication or distortions of the facts and legality of facts in conformity to the given mandates;

- *gain respect and trust* assume the most effective way for military forces to understand the skills, knowledge and capabilities of IOs and NGOs is to establish and maintain relationships before entering an area of operations and legality has to be absolutely unambiguous, communicated and understood that Alliances' forces will remain within the framework of their mandate and their rights and obligations, agreed by the mandating authority, at all times. This framework might need explanations to non-NATO-actors in the area;

- *civilian primacy and ownership* promoted by CIMIC commanders by reducing dependency of the locals from the military assets and by settling a plan for transition to civilian ownership as well as an exit strategy;

- *integrated planning* is a principle achieved by prioritization of actions, synchronization in order to target the common goals and coordinated resource management;

- *effective communication* in terms of a high extent relay on information from both civilian and military directions that relies on strategic communication, resources, facilities and interoperability of communication and information systems and proper networked infrastructures.

Strategic communications (StratCom)¹¹. This is the effective communication between military commanders and their national and international political and policy decision making bodies. It include maintaining the operational civil-military interface relationship between military commanders and national, governmental authorities and active IOs and NGOs on one

⁹ *Allied Joint Publication 3.4.9, Allied Joint Doctrine for Civil-Military Cooperation*, Edition A, Version 1, NATO Standardization Agency (NSA), February 2013, p. 3-1.

¹⁰ *Allied Joint Publication 3.4.9, Allied Joint Doctrine for Civil-Military Cooperation*, Edition A, Version 1, NATO Standardization Agency (NSA), February 2013, pp. 3-1...3-7.

¹¹ *Allied Joint Publication 3.4.9, Allied Joint Doctrine for Civil-Military Cooperation*, Edition A, Version 1, NATO Standardization Agency (NSA), February 2013, pp. 3-5, 3-6.

side and the civilian population of countries within the joint operations area (JOA), including the tactical level, at which interaction between the military and civilian sectors takes place on the ground. It will be vital in applying the foregoing principles: maintaining consent, generating the necessary level of understanding and cooperation.

CIMIC aims to contribute to improving the living conditions of local people by implementing humanitarian assistance projects and by supporting a stable development of economic life in the area of operations. This manner of action has certain valence to influence the local population. Its argumentative capacity derives from the force of deeds, much higher than the force of words, the latter is most certainly counterproductive when a visible gap between words and deeds appears. CIMIC assistance is not conditioned on any form by the acceptance of the presence and activity of the military forces or by the intention of influencing organizations, authorities and the population to whom they interact, although is not an object in itself, but it bases its entire conduct on strict observance of the principle of transparency.

3. CIMIC Structures

Romania has been a model of civil-military relations since the Middle Ages. When an army of 10,000 people defeated an army of 500,000 Ottoman Empire soldiers, if the civilians did not cooperate with the military, we would have witnessed a pashallic transformation. In the Middle Ages, the Romanian people used to live in the mountains and, through the cooperation of civilians and soldiers, they managed to defeat adversaries by asymmetric methods, compared to the forms of struggle that existed at that time. Also, the cohesion between the military and the civilians in Romania made more achievable its membership to NATO, owed to the strong civilian support of the military institutions.

The practical cooperation of the Romanian Armed Forces with local, central and international civilian organizations, in the theaters of operations, has evolved in accordance with the regional and international aspects, with international organizations increasingly attaching importance to the role of local authorities in the crisis-affected area and civil society, in the process of stability and crisis resolution.

The engagement of the Romanian Armed Forces on strategic, operational and tactical levels of action in the operations clearly underlined the dependence and the synergy between providing military and civilian support to solving major crises of low or high intensity. Thus, civil organizations having a special merit in determining the root causes of a conflict have succeeded in preventing the return to instability.

The new security challenges after 2004, that also lead to the change in the CIMIC doctrine, reflect the progress and valences of the interdependent operating environment, starting with the improvement of crisis management tools, namely dialogue and cooperation, at all levels, with the international organizations, the non-governmental organizations, and the central and local authorities in the area of crisis, in the planning and conducting of operations.

The participation of the Romanian Armed Forces in the interaction between military and civilians is materialized by providing the necessary capabilities for expertise and conflict prevention. Thus, a number of structures have been created to support to act in times of peace and in crisis situations¹².

¹² SMG/P.F.A. – 53, *Manualul pentru cooperare civili – militari (CIMIC)*, București, 2015, p. 116.

1998	<ul style="list-style-type: none">•setting up the first G.5 CIMIC structures within the Comandment of the Great Unit (In Romanian: Mare Unitate - M.U.)
2001	<ul style="list-style-type: none">•setting up the first CIMIC units - 1 CIMIC Group
2004	<ul style="list-style-type: none">•transformation of 1 CIMIC Group into 1 CIMIC Battalion
2005	<ul style="list-style-type: none">•the first Romanian CIMIC mission - mobile teams in areas affected by floods
2006	<ul style="list-style-type: none">•affiliation to the Multinational CIMIC Group (former CIMIC SOUTH Group)•the first CIMIC team in Afghanistan's theater of operations
2007	<ul style="list-style-type: none">•certification and affirmation of proposed structures for operationalization

Figure no. 3: Brief history of CIMIC in the Romanian Armed Forces

In order to achieve the purpose of civil-military cooperation, specialized structures, organized and dimensioned according to the nature of the mission are needed. Thus, CIMIC specialists, from the individual specialist, to the CIMIC specialized unit, and their competencies according to the mission they perform, have been established within the operational and tactical organizational forms.

CIMIC responsible is the specialist integrated in the operational command structure to advise the commander on the civilian aspect and to coordinate CIMIC activities in the area of responsibility.

The CIMIC deployable module consists of personnel and logistics equipment that can cover the core CIMIC functions and the operations and planning domains. The deployment of this module is necessary if CIMIC activities exceed the CIMIC's planning and coordination capacity or when CIMIC elements are required to perform missions with civil organizations in humanitarian, disaster or reconstruction missions.

The CIMIC support unit is a battalion-level structure, consisting of leadership elements, civilian elements, CIMIC support elements¹³.

The CIMIC Battalion is one of the modern structures of the Romanian Armed Forces, whose primary role is the creation of a normality framework both at national and international level, through the efficient management of crises on various levels of intensity (in peacetime, in crisis situations on the national territory or outside national territory, in war and post-conflict period). It was designed to perform actions in peacetime, crisis and war but, as it is not a deployable structure (to participate in operations), this battalion will not be deployed entirely, only certain elements of its composition, having a CIMIC expertise center to assist CIMIC staff at the tactical level.

¹³ Functional specialists are trained to assess the situation in the areas of functional expertise, provide analyzes and recommendations on the specific courses of action of the expertise fields, ensure the management of the evaluated projects and can participate individually on missions depending on the field of competence they have.



Figure no. 4: Responsibilities of CIMIC Battalion¹⁴

The role of this CIMIC battalion is to create civilian-military conditions that give the commander the opportunity to choose an optimal course of action for successful mission fulfillment and to operate in a complex space from infrastructure, medical, legal, to international relations.

The size of this battalion is a complex one, starting from a number of companies, groups of specialists with different tasks to a variety of missions as follows:

- *In peacetime* - by preparing forces and means to participate in missions by removing the effects of natural disasters, supporting anti-terrorist actions, supporting the host nation;
- *In times of crisis* - specific activities of crisis management (planning, coordination, execution), management of population and resources, participation in various operations;
- *During wartime* - for national defence, collective defence (NATO), operation support, host nation support.

By enumerating these quite complex and varied missions as a way of action, at national and international level, the CIMIC battalion carried out a series of activities with international partners, as follows:

- 2006 - 2010 - a CIMIC team in Afghanistan;
- 2010 - 2014 - 2 tactical teams in Afghanistan, one CIMIC officer in Iraq;
- 2010 - 1 HELBROC platoon;
- 2011 - 1 NRF platoon;
- 2013 - 2014 - 1 HELBROC platoon;
- 2014-2015 - 1 platoon in the NRF.

Approaching only a part of this vast area of the civil-military cooperation dimension, one cannot omit the CIMIC training concept, which at first reading seems quite well elaborated, by participating in working groups, conferences, seminars, study of publications, participation in training exercises but which in reality seem inaccessible. Thus, a series of international courses come to complete this vast experience of this CIMIC battalion, such as:

- ✓ 2011 - International courses at Kaiserslautern for MIL to MIL training;
- ✓ 2012 - Stavanger (Norway);
- ✓ 2013 - Kilkis (Greece);
- ✓ 2014 - Stavanger (Norway).

That is why, this study tries to outline the general state of the CIMIC dimension, pointing only to some important aspects of the civil-military relationship, but rather emphasizing the multinational aspect of this dimension, viewed from the perspective of the multitudes of realities in the theaters of operations. These realities are different from the ones on the national territory, in this case the problems regarding the CIMIC projects, the negotiation mode, the legal aspect of the CIMIC and, last but not least, the mentality of some concerning the importance of the CIMIC missions.

¹⁴ SMG/P.F.A. – 53, *Manualul pentru cooperare civili – militari (CIMIC)*, București, 2015, p. 116.

4. CIMIC in the theaters of operations

The deployment of CIMIC forces and resources in the theater of operations as part of a national contingent of the force is done by the force generation process.

At the strategic level, the specialized structure for managing civil-military activity is the Civil-Military Co-operation Office in the subordination of the Romanian Defense Staff, which establishes the civil-military cooperation policy and elaborates documents specific to the CIMIC field in accordance with international regulations.

At the operational level, the structure that manages the civil-military cooperation activities is the Joint Forces Command (JFC), which coordinates the CIMIC actions of the Romanian forces in the theaters of operations and evaluates the preparation of the forces for deployment. Romanian military structures deployed in theaters of operations were generally used in the post-combat operations phase, fulfilling missions for force protection, anti-terrorist response, for destruction of drug trafficking networks, missions specific to the Military Police, information gathering missions, and participation in INFOOPS activities.

In the operations' theatres are carried out information operations aimed at obtaining or maintaining the support of the civilian population and countering hostile mass media. These are informational operations, INFOOPS (media, CIMIC and psychological), which act as a force multiplier and a factor for the reduction of violence. These operations are integrated into planned and campaigns managed at the operational level.

1st CIMIC BN has as main objective the provision to the Romanian Armed Forces of a structure and specialized personnel able to provide commanders advice in the rather extensive and complex field of civil-military relations, focusing on three major directions:

- *Civil emergencies* (support of local authorities and civilian population in areas affected by disasters on national territory in partnership with the General Inspectorate of Emergency Situations);
- *Augmentation of multinational forces headquarters* with specialized CIMIC personnel, capable of fulfilling a full spectrum of specific missions;
- *Participation with specialized CIMIC structures*¹⁵ in theaters of operations.

The missions of CIMIC specialists derive from the realities of the modern battlefield, with new, complex challenges that cannot be countered only by military operations. The sad reality of the theaters of operations in which Romanian military are deployed is that no matter the country of where they come from or the mission they have, multinational forces will always be seen with mistrust or hostility, and even with hatred by part of the local population. Therefore, the first mission of CIMIC specialists is to permanently gain trust of the host nations' citizens that multinational troops in general, and the Romanian military in particular are there in their country (be it Afghanistan, Iraq, Kosovo) to bring peace and stability and to help keep hope for a better future.

By addressing these essential roles of CIMIC in a theater of operations, we cannot overlook the fact that all these achievements would not be possible without the existence of CIMIC projects. The role of these CIMIC projects, which are well-argued and funded, can bring an improvement in the image of the military force in the area, improve the image of the military force to the local community, increase the morale of the troops, giving them the chance to work alongside the local population at the reconstruction. These types of projects, be they civic or medium-sized, require more precise and clear control and tasks, because the CIMIC officer in a conflict area, on the basis of proposals from local authorities, proposes to the agencies designated for the implementation of these projects (water supply stations, civil engineering), and those agencies can approve or not implementation of those projects. The

¹⁵ At this time, in Afghanistan a single CIMIC officer manages this activity.

disagreement between those who finance these projects will lead to a shortage of relations with members of local authorities (tribal leaders). A favorable decision on such a project implementation creates the precedent for the inhabitants of that area to be more receptive to the soldiers patrolling their territory, giving them some security.

4.1. Provincial Reconstruction Team

The 2006 Riga Summit set out the NATO Enhanced Capacity Building Guidelines to support stabilization and reconstruction efforts at all critical and crisis phases. Primary responsibilities for stabilization and reconstruction have been taken over by local, international organizations and non-governmental organizations. Civil expertise to determine the level of national resources may be needed in the future to advise the military in the context of support for stabilization and reconstruction in coordination with the host nation. This could include advice on issues such as rebuilding the local industry, transport network, relaunching agricultural production, health and sanitation system, civil reconstruction, or communications infrastructure.

Civil-military coordination among actors in the field is an important element of NATO's current and future operations. Provincial reconstruction teams mandated for Afghanistan are a good example. These small civilian and military teams allow better expansion of government authority from a conflict zone and help local authorities to provide security. These teams should be perceived as:

- Mediator of military actions;
- Not as an occupation force;
- Flexible - owed to their ability to operate in both activities - post-conflict reconstruction and development in those areas at high risk of hostility.

4.1.1. Provincial Reconstruction Teams' mission

in January 2003, the first mission of the PRTs¹⁶ started in the theater of operations in Afghanistan to assist the Islamic Republic of Afghanistan to expand its authority to facilitate the development of a safe and stable environment in a defined area of operations in order to improve its reform efforts the security sector and civilian reconstruction.

The ISAF mission consists of 42 nations. Also, there exist 5 Regional Commands situated in the capital (Lead nation: France), in North (Lead Nation: Germany), in West (Lead nation: Italy), in East (Lead Nation: USA) and in South (Lead nation: Netherlands, but rotates GBR and CAN)¹⁷.

PRTs vary according to location and the specific security and development needs in a particular area, the practices and military cultures of contributing states and how effectively they engage with local leaderships and populations. The most successful PRTs have been those that are best attuned to recognizing Afghans' conceptions of Afghans' needs.

4.1.2. Tasks and activities

In Afghanistan, the main objective was to reconstruct and develop a security system that was compatible with the new challenges of the security environment and to ensure good governance by designing and implementing reconstruction projects, promoting dialogue with local leaders, security forces training, demobilization of armed groups, and provision of medical care.

PRTs seek to establish an environment that is secure and stable enough for the operation of international and Afghan civilian agencies to provide development support. Due

¹⁶ We can mention that wherever these provincial reconstruction teams were located, their role was fulfilled according to the requirements of that conflict zone.

¹⁷ See: <https://www.google.ro/search>: ISAF map on NATO.int, accessed on October 02, 2018.

to their unique composition, PRTs are also able to deliver development and support to less secure areas. USAID's programs attempt to work with PRTs to deliver services in less secure or underserved areas of Afghanistan.

A PRT generally covers one province in Afghanistan, but some cover more than one. There are currently 26 PRTs operating in Afghanistan¹⁸, 12 of which are under US command. Thus, ISAF Multinational PRTs with respective lead nations are: Baghlan (Hungary), Chaghcharan (Lithuania), Fayzabad (Germany), Herat (Italy), Kunduz (Germany), Mazari Sharif (Sweden), Maymana (Norway), Qala-e Naw (Spain), Kandahar (Canada), Lashkar Gah (United Kingdom), Tirin Kowt (Netherlands), Wardak (Turkey), Parwan (US/South Korea), and Baymian (New Zealand). There are also US-Led PRTs in: Asadabad, Gardez, Ghazni, Jalalabad, Khowst, Mehtarlam, Farah, Qalat, Sharana, Nurestan, and Panjshir.

PRTs have a broad mandate that covers the following areas¹⁹: to engage key government, military, tribal, village, and religious leaders in the provinces, while monitoring and reporting on important political, military and reconstruction developments; to work with Afghan authorities to provide security, including support for key events such as the Constitutional Loya Jirga, presidential and parliamentary elections, and the disarmament, demobilization and reintegration of militia forces; to assist in the deployment and mentoring of Afghan national army and police units assigned to the provinces; to provide needed development and humanitarian assistance in partnership with the Afghan Government, the UN, other donors and NGOs, PRTs.

Analyzing how these PRTs work, one can say that they are fulfilling their duties by trying to fill existing gaps arising from the various weaknesses of governments. This is achieved in order to provide support to local institutions through a series of practical relationships and appropriate with local authorities.

Financial commitments make investments in reconstruction of some of the most critical areas such as education, health, agriculture, security and, last but not least, governance, to become a priority of PRTs. CIMIC elements indirectly engaged through the mere presence of its military forces have resulted in significant provision of security by activities as patrolling, collecting or disseminating information, assisting in the construction of facilities for security forces (Check Point, police departments and donations of different types).

5. Afghanistan War - a new dimension of the Romanian CIMIC

“Missions in Afghanistan and not only leave unseen fingerprints in the heart of the Romanian military, which only he can feel. As ever, they, with a hungry wolf hungry, break for six months of his normal life. I know, it's our job, we chose it. Every time we only have that reconciliation with ourselves, by doing what we need; that at the end of each mission, we receive appreciations that recognize our efforts, professionalism and, last but not least, our attachment to national values. Maybe they're big talk, they're in a state of emotional necessity, but here in the international missions, you test the military oath. A new day in the Kandahar Air Base, the home of the Military Force Infantry Battalion, a new day, a new challenge with many missions, a new day when life betting is to be won. Learn in the midst of the Afghan population, we cannot neglect an aspect, perhaps more important than all our beliefs before the time we arrived in Afghanistan, culture. A lot different from what we know, Afghan culture is differentiated by customs, traditions and religion and must be well understood by

¹⁸ *Provincial Reconstruction Teams*, USAID, November 05, 2018, available online at: <https://www.usaid.gov/provincial-reconstruction-teams>, accessed on November 05, 2018.

¹⁹ *Idem*.

Romanian soldiers. Grouped, these concepts are reflected in a basic element of Afghan society, namely respect. Therefore, we show respect and we are easily assimilated, we increase the population's confidence in the Coalition Forces and we meet our goals"²⁰.

CIMIC missions are part of a wide range of missions specific to counter-insurgency operations carried out by the Romanian military (Infantry Force Protection Battalion) aiming to gain the trust of the Afghan civilian population and to establish collaboration relations with the leaders of these Afghan tribes. This mission is quite difficult due to the reluctance of some villages communities set in the coalition's forces area of operation and to the existence of the Afghan civilian population to the limit between military security and the threats of the insurgents to that population not to fraternize with their hostile forces. Thus, these missions became rather difficult, which needed from the coalition forces much more attention and preparation until the last detail of the actions and missions, so that in the end the local population actually to join the efforts of supporting Afghan authorities to implement security and establishing a democratic regime in Afghanistan.

Therefore, by the Romanian battalion, and in this case by the CIMIC officer, the support given to the civilian population does not only consist of military actions to ensure the security of the main communication routes, the main inhabited areas, but by material support (of the CIMIC elements and of provincial reconstruction teams at local and regional level) to complete projects aimed at building communications, rehabilitation of water networks, construction of schools and sanitary units: "... We want to explain during these meetings with the locals the need for permanent communication with the local authorities in order to make known the real needs of the communities. We also want to encourage economic growth and education projects during the talks. We listen to them and try to help them. Our permanent message is: we are here to help... the Afghans seem happy, are fulfilled spiritually ... or are they just resigned? I do not know ..."²¹

Still, the size of the Romanian CIMIC structures in the mission in Afghanistan is quite low in light of the limited funds allocated by the Romanian state. One can only speak about the Romanian soldiers who became CIMIC specialists by their manner of relating on their understanding of the new security environment in Afghanistan, with new types of daily challenges they face and their relation to the Afghan population.

Conclusions

After this incursion in such a vast field of civil-military cooperation, it is and will remain a benchmark, working with civilians as a challenge for all military personnel due to differences in organizational culture, increasing involvement in humanitarian processes and projects support of the local population, political issues in working with government representatives. In order to be able to implement and cooperate with various civilian entities, these structures involved on this level of civil-military cooperation are obliged to carry out training programs before and after deflating in the theaters of operations and to know the following:

- International law concerning both the status of the person, the status of the forces, the humanitarian law, the rules of engagement;
- Identifying existing facilities in that country to achieve the support of the host nation;
- To cooperate with local public authorities, civilian population, national and international organizations in the area of operations;

²⁰ Romanian Armed Forces Blog, *Misiunile CIMIC sau conectarea la viața reală din Afganistan*, available online at: <https://www.armataromaniei.ro/blog/42599/misiunile-cimic-sau-conectarea-la-via%C5%A3a-real%C4%83-din-afganistan>, accessed on September 04, 2018.

²¹*Idem*.

- CIMIC negotiations techniques and tactics, which are often multilateral, and therefore require increased attention in reaching common points.

Knowing these aspects outlined above, cooperation between military and civilians could increase the trust, security of both the local population and the military force involved. Therefore, the mission of CIMIC specialists is to make permanent and as much as possible the number of those who understand that multinational troops and, in general, Romanian troops, in particular, are there in their country (be it Iraq, Afghanistan, Kosovo or other conflicting areas) to bring peace and stability to help keep hope for a better future.

In order to demonstrate the importance of CIMIC missions and their contribution to the stability of the situation in a particularly active and dangerous conflict area, bring to the attention that even a small gesture that does not involve financial sacrifices –collecting toys for children in the conflict areas - can have very big effects at destination and can save lives. The end of the Iraqi mission after seven years, with only a few victims, under extremely difficult and dangerous missions among Romanian troops, may also be the result of the CIMIC structures that have acted all these years in Iraq.

The Romanian militaries are the promoters of peace and security in Afghanistan through devotion, respect and sacrifice in a country where the foundations of democracy have not been officially recognized, and for a few years has taken immense steps to understand that without democracy there can be no peace, as without sustainable development there would be no progress of Afghan society. They did so much with little material resources but with huge support from colleagues in the coalition forces present in Afghanistan. “Shoulder by Shoulder!” A note that should not be forgotten by any military anywhere in the world.

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THE USE OF SPECIAL OPERATIONS FORCES IN THE CONTEXT OF CONTEMPORARY WARS: CONCEPTUAL, OPERATIONAL AND TACTICAL HIGHLIGHTS

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Abstract: *Special operations forces (SOF) are considered highly capable, elite forces that are trained and maintained to address critical national security objectives. SOF's versatility, speed of deployment, and capabilities make SOF ideally suited for today's security environment, where significant dangers are created by regional conflicts, the proliferation of weapons of mass destruction, and transnational threats. Thus, it is important for the Department of Defense to ensure that SOF are ready to perform their intended missions and are used in ways that capitalize on their unique capabilities.*

Keywords: *Special Forces, special operation forces, special operations, hybrid warfare, unconventional warfare, army, area of operations.*

"The one who knows how to lead large and small armies, will be triumphant".
Sun Tzu, "The Art of War"

Introduction

The end of the 20th century and first decade of the 21st century are characterized by a new variation of wars and conflicts. Military experts from different countries confirm, that human society is entering an era of a new generation and a new kind of war, which will be characterized by the use of non-traditional methods of forces and means use. In this context, it will increase the willingness of the parties in the war, not in the physical destruction of the enemy, but in the deterrence of its military power. In such conditions, the decisive role will be intended for Special Operations Forces (SOF) and Special Forces (SF) - competence that typically are assigned tasks to destroy strategic targets of major importance in the theater of operations in front of the enemy lines, and behind both operational and tactical backline, conducting aviation and missile attacks, psychological operations, etc.

Military theorist Carl von Clausewitz stated: "*war is the continuation of policy by using other means*"¹ and those "other means" of the 21st century are the latest achievements of science and technology - not only military, but also social. Finally, future technologies often have a dual purpose and are used at first for the military-industrial complex, and only then enter the civil market. The social sciences - from the cognitive to the ethnological, are been actively used for political and military purposes. Special sections of the military departments, study over how more effective and with fewer resources to "destroy" the cultural code and subordinate the willingness of the enemy's national spirit.

¹ Карл Филипп Готтлиб фон Клаузевиц, О Войне, Издательства, Эксмо, Мидгард, 2007, р. 12.

If in the Middle Ages there was a clear set of rules for war and a strict code of ethics, nowadays the dominant political and military forces are shameless using all the opportunities to destroy, humiliate and demoralize those who resist.

History already knows many facts, when the use of special operations forces, both before and during the conflict, contributed to the success of the operation. These and other facts as well as the increase of terrorism in the world have enabled military specialists to expand the functions of the Special Forces in support of combat operations at all stages.

Legend, misinformation, silence - a "trio" used by military forces sent to carry out this kind of small scale, clandestine, secret or open, operations with a high degree of risk. Destined to fight and win or die, often without recognition, these fighters are "Knights" of this century in the politico-military confrontations. Special Forces are heterogeneous units and formations, consisting of the most equipped and prepared both spiritually and physically elements, the fearsome weapon representing each nation, the ACE hidden in the sleeve. Useful and discrete tools, relatively inexpensive in comparison to the produced damage, Special Forces are becoming more and more prevalent.

1. Special operations – means of modern war

The main form of SF use is a special operation. The term "special operation" (SO) from the NATO Glossary of terms and definitions, seems to be the term of reference after which most NATO countries define or characterize the concept of special operations: "... *selected special forces military activities, organized, trained and equipped, using operational techniques, tactics and methods which are not used by conventional forces. These activities are conducted in the entire spectrum of military action or in coordination with conventional forces, to achieve certain political, military, psychological or economic objectives. In the politico-military confrontations may be used, clandestine or covert techniques, and the degree of risk of such operations from politically or diplomatically point of view is much bigger compared to a conventional action*"².

The missions characterizing the Special Operations are ranging from small, unilateral actions, up to joint, multinational activities on a large scale. SO are materialized through the main tasks of SOF throughout the spectrum of conflict.

Within the Alliance, they can be deployed as part of the operations of collective defence (Article 5) or as non-Article 5 crisis response (NA5CROs)³, as follows:

- *Peacetime military employment*. SOF can be effective when they are carried out in the context of specific activities in peacetime and can contribute directly to strengthening cooperation, ensuring the early identification and assessment of a crisis situation, training of friendly forces and the development of military bounds;

- *Peace-support operations*. Depending on the nature of peace support operation, can be carried out the following activities: Special Reconnaissance (SR), Direct Actions (DA) or Military Assistance (MA). MA can provide specific support in conflict prevention and in humanitarian assistance, while SR and DA can materialize efforts to create conditions for peacekeeping, peacemaking or peacebuilding;

- *Counter irregular threats operations*. During the preparation for operations to counter asymmetric threats, SOF can provide assessments of the area and immediate capabilities for command, control and communications. They can also support response options related to the use of NATO military power in accordance with the regulations. During the operations of counterinsurgency, SOF can also carry out SR, DA, MA, or a combination

² AAP-6, *NATO Glossary of Terms and Definitions*, 2015, p. 704.

³ *Doctrine for Joint Special Operations*, JP 3-05, 1998, pp. 1-2.

of these necessary for the support of allied joint operations with the aim of achieving political and military/strategic objectives;

- *Specific major operations.* During specific operations, SOF focuses mainly on SR and DA missions. After the hostilities end, SOF can carry out MA missions in support of host nation (HN)⁴.

2. SOF use principles

Although SOF are mostly using unique equipment and sophisticated methods, essential element that ensures the success of the missions is tied directly to the individual operator. It is therefore essential that plans and procedures governing employment of SOF to be simple and direct, so the commander's intention to be understood. For the optimal employment of SOF is essential the understanding of the principles of their use⁵:

- *High value targets.* SOF must be directed towards the achievement of high value objectives, which may involve a major risk, but at the same time a great value. Quantitatively, SOF are limited and cannot be quickly regenerated. They cannot be employed as conventional forces (CF), whose actions are generally based on maneuver and favorably forces report. SOF focuses the battle power, directly and indirectly, in decisive moments and places. Increased attention should be given to the use of unadjusted SOF efforts against targets, which are probably more suitable for CF. It is necessary for SOF to be allocated for assignments, which lead directly to the fulfilment of the military-strategic or operative objectives.

- *Access to information.* Normally, SOF actions are planned detailed and based on accurate information, in order to ensure that the plans are fully in line with the situation in the areas planned for the operation. Access to timely information, detailed and accurate, that is received from all integrated sources of information, is essential to the success of an operation.

- *Clear C2 relations.* Because of the type of mission, the chain of command is essential so from this point of view, SOF requires special attention to communications security to ensure full integration in the joint C2 system, through specific connections and interfaces of *Computer Information System (CIS)*.

- *Mission directives.* The basic SOF concept requirement are centralized planning and decentralized execution of operations. This is one of the reasons why SOF mission directives must allow sufficient flexibility for operational elements to react to opponent's actions and give the necessary authority in adjusting the SOF plan according to the requirements dictated by the changes in the situation during the mission.

- *Operation Security (OPSEC).* Security plays a major importance in carrying out SOF actions. Information, counter information and informational operations should be integrated throughout the planning and execution of missions, to strengthen security. OPSEC is used to identify and protect critical information for the success of the operation, such as *Essential Elements of Friendly Information (EEFI)*.

3. Types of special operations

SO can be single engagement, such as: DA against HVT, prolonged operation or series of operations, such as support of insurgent forces in Unconventional War (UW) and HN support through *Foreign Internal Defense (FID)* and *Security Forces Assistance (SFA)*.

Military Information Support Operations (MISO) can be used during SO to influence target audience behavior and actions.

⁴ *Joint Special Operations Task Force, (JP) 3-05.1, 16 July 2014, p II-2.*

⁵ *Ibidem, pp. 1-8.*

Civil Affairs Operations (CAO) ensure essential support to JFC or State teams. SO in sync with MISO and CAO can create disproportional effects in relation to the size of the units involved. In the context of Joint Allied Operations, SOF conducts three main tasks SR, DA and MA⁶.

Special Reconnaissance (SR). SR complements national and theater intelligence collection assets and systems by obtaining specific, well-defined, and time-sensitive information. SR may also complement other collection methods constrained by weather, terrain-masking, or adversary defenses. SR is a function of *Human Intelligence* (HUMINT), to place “eyes on target” in a hostile, denied or politically sensitive territory. SOF can provide timely analysis by using their initiative and own evaluation method in a way that other technical elements have no possibility. Special operations forces are carrying out these missions independently, supported or in conjunction with/for the benefit of other forces/command. SOF can use research and surveillance techniques, equipment and advanced methods with the aim of collecting data and information, sometimes supplemented by indigenous means. Specific SR activities include the following:

- *Environmental Reconnaissance in the area of operations*. These are operations for the collection and reporting of critical geospatial data and information, including those hydrographic, geological, geographical and weather;

- *Threat assessment*. Threat assessment must be based on accurate and timely information whenever possible. SR can assist JFC in the discovery of elements used by the opponent, which causes threats to the operation or force, to identify the opponent's capabilities to carry out attacks, methods which they can likely use in the execution of their own forces and elements that may be targets for enemy attack. SR also offers options related to the observation and interpretation of the behavior of a target and opponent forces in the context of large periods of time.

- *Target assessment*. These are operations for detecting, identifying, locating and evaluating a target to determine the efficiency in the use of different weapons systems. This type of operations may also include evaluation of potential effects (including collateral damage) of target engagement.

- *Post-strike reconnaissance*. These operations are carried out with the purpose of collecting information to Battle Damage Assessment (BDA) and determining the effects of munitions used, with the purpose of measuring the results of an attack.

DA. These are high-precision operations, limited in scope and duration. DA implies, normally a planned extraction from area of immediate vicinity to the objective; focuses on specific well defined, of operational or strategic value targets, or in the context of some decisive tactical operations. SOF can conduct these types of assignments independently or with the support of the CF. Direct actions activities include:

- *Raids, ambushes, direct assaults*. These operations are intended to achieve specific results, well defined and often sensitive from the point of view of time. They are sometimes beyond the actual capabilities of the CF components. Such operations typically involve, target attack, disrupting Lines of Communications (LOC), capturing personnel, military technologies and weapons, conquest, destruction of enemy capabilities or facilities.

- *Target acquisition operations*. These are operations for the identification and reporting of targets' accurate location, to allow non-organic SOF platforms to use high accuracy weapons systems. This includes any type of mechanical or electronic communications, voice mail, which provides aircraft/weapon system additional information of a target's specific location.

⁶ *Doctrine for Joint Special Operations*, JP 3-05, 1998, p. 2.

- *Personnel Recovery Operations*. These are operations for searching, locating, rescuing and bringing back personnel, sensitive equipment or items critical to the state's security from battle zones or enemy-controlled areas. SOF recovery missions are characterized by detailed planning, numerous repetitions and a thorough analysis of the info. In these types of operations are used unconventional tactics and techniques, and the use of a discrete land teams.

- *Precision damage* represents operations in which collateral damage must be minimized. In this type of operations are used sophisticated precision weapons or specific types and quantities of explosive substances, installed in exact locations for the accomplishment of the mission. Execution of precision damage operations are deployed against targets on which high-precision weapon systems using guided ammunition does not guarantee the success of the first flick or when something from the facility must be destroyed without producing damage to the facility.

Military assistance (MA). This is a set of measures in support of friendly forces throughout the spectrum of conflict. MA may be done with or by friendly forces that are trained, equipped, supported, or used by SOF. The scale of MA is considerable and can range from providing military training to material support given to indigenous forces active in major operations. MA activities may include the following:

- *Training*. It represents a complex of training activities of the HN's military and Armed Forces units for the in use at the tactical level, support and integration of combat skills; provides advice, assistance and training of military leaders in the use of specific tactics, techniques and procedures for consolidation of HN's potential to protect itself against threats and develop required individual and organizational skills.

- *Counseling*. These are activities that enhance the security of the population, by providing active participation in tactical level operations, of HN's armed forces units with the purpose to neutralize insurgent threats, isolate insurgents from civil population and protecting it.

SOF collateral or additional missions begin from conventional ones: counter-terrorism operations, hostages rescue, CWMD and combating unconventional ones, missions against insurgents, guerrillas, capture/elimination of enemy leaders, etc.

We will look at only the most important of the additional missions:

- *Counterterrorism (CT)* represents offensive measures designed to reduce state, its personnel and properties' vulnerability to terrorism. This includes repressive measures carried out by the armed forces and civil agencies. *Counterinsurgency Operations (COIN)* are those military, paramilitary, political, psychological actions taken to defeat a civil insurgence. CT and COIN are not exclusive areas of SOF belonging to NATO, but they can effectively support diplomatic, economic, military and informational operations applied with a specific COIN purpose. An irregular threat, even by its nature, will involve SOF to perform actions to combat terrorism in the context of COIN operations, at all operational levels.

- *CWMD*. Activities intended for the proliferation of CBRN weapons are inherently complex tasks involving restrictive OPSEC procedures and generally require the use of a specially trained and equipped personnel. In the context of NATO operations, involving SOF in actions of prohibiting, catching or securing of CBRN weapons or associated facilities will generally be taken over by Alliance members who have specialized capabilities required.

- *Hostage Rescue Operations (HRO)*. Special operations forces, acting under NATO mandate, will not generally be involved deliberate HRO. However, this general principle does not preclude direct or indirect involvement of NATO SOF in such operations under some circumstances.

4. Growing role of SOF in supporting political objectives

Analysis of military conflicts and international confrontations blurred traditional concept, so SOF have a growing role, which for a politician represents a tool that can be used at some point in well-defined conditions to support political objectives that it promotes. These kinds of military formations are valued by the political factor, both through their nature, quantity and quality, and their use in space and time. The nature of the needed effects that are intended to be achieved with Special Forces, the amount of economic and financial resources that can be allocated to the military effort affects both the choice of forces and means.

An enlightening example of use by a state of a non-state unit as a means of resolving a confrontation with political-military character is the situation in the Middle East. In 2011, allied NATO countries have relied on indirect army intervention, using SOF during the civil war in Libya, which led ultimately to the overthrow of the regime of Muammar al-Gaddafi. At the same time, level and spectrum of resources involved in backing Libyan rebels have been extremely varied. It was established so-called “free zone”, which has deprived Government troops, an advantage over opposition forces. SOF structures of member countries have fulfilled the functions of the instructors, offered support and management of rebellious troops and participated in the planning. In this operation, there were involved private military companies, which in their essence, are non-state actors in military operations⁷. All these episodes are only part of the facts that illustrate the use of deliberate non-state actors in armed conflicts by third countries.

In order to achieve state or coalition’s political-military and military-strategic objectives, both during peacetime or war, and to support operations in the TO, special strategic operations will be carried out. Thus, during the active phase of the operation “Neptune Spear” for the liquidation of Osama bin Laden (Pakistan, may 2011) groups with limited staff were involved (28 troops), it lasted no longer than 40 minutes, but according to American experts, this was essentially a strategic operation⁸.

Irregular operations are confrontation between state and non-state actors for power and influence over the population. If SOF have the mission to change of undesirable political regime, then these formations lead non-traditional operations in support of opposition forces. If military operations are carried out in the territory of a friendly state, then, acting on behalf of the official authorities, these formations will fight insurgency, opposition forces and terrorist organizations. An enlightening example of use of SOF is Russian crime in the Crimea in February-March 2014, where they have secured the start of operation of the Russian armed forces for blocking military targets on Ukrainian peninsula. Quick and bloodless capture of the most important military and State targets, selective blocking of communications systems led to the success of the operation in its entirety. Although the use of the armed forces of the Russian Federation in Crimea was officially recognized, the SOF actions in this campaign were not discussed. Discussion on the edge of Russian SOF structures appeared in premiere during the rescue-evacuation operation in Northern Province of LATAKIA, after overcoming of Russian Su-24 bomber by the Turkish air force. During the operation, it was needed to save not only the bomber crew, but also the crew of Mi-8 helicopter involved in the rescue operation with the Russian Marines on board. The operation was carried out in cooperation with the Syrian army and pro-governmental forces.

⁷ “Head of French Company is Killed in Libyan City2, *The New York Times*, May 12, 2011, available online at: <https://www.nytimes.com/2011/05/13/world/africa/13benghazi.html>, accessed on October 28, 2017.

⁸ “Operation Neptune Spear - Raid on Osama Bin Laden's Hideout...”, *Global Security*, available online at: <https://www.globalsecurity.org/military/.../neptune-spear.htm>, accessed on October 28, 2017.

SOF units were actively used in Syria, both in combat operations, including research, conduct strikes and actions against terrorist forces, and to ensure humanitarian operations, including humanitarian aid and experts escort. Finally, in December 2016, the TV channel "Rossia-24" in the "Vesti Nedeli", demonstrated the pictures with Russian SOF participation in direct clashes with terrorists from Syria, which can be considered as a recognition of the role of SOF in this campaign. According to the study, we conclude that the area of operation of the Russian SOF structures outside the Russian Federation is not limited to actions in Syria. Concluding from information available, SOF is used against terrorists from North Africa to the territory of Afghanistan and the former Soviet republics of Central Asia. As in the case of Syria, SOF operations in these areas are carried out using the technical recognition equipment, as well as information received from agents.

Conclusion

Thus, the analysis of conceptual opinion of political and military leadership of the U.S., NATO and the Russian Federation about SOF in recent conflicts allow to conclude that the main form of their application is SO which in the near future will undergo adjustments and namely, that the difference between strategic, operational and tactical levels will gradually lose. Subsequently, they will become universal by their nature. It will cease to be a clear distinction between the defensive and offensive operations and will have an offensive orientation. The division of the traditional and irregular operations will continue in the next few years, and in many cases, the SOF actions will represent combination of both forms of "hybrid action". Action methods will have a mixed character, combining both combat operations and non-combat actions, but at the same time will improve steadily. This trend will be sustainable.

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NATO EUROPEAN MISSILE DEFENSE FROM DESIRE TO REALITY

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Abstract: *The current global security environment is dangerous and unpredictable, bringing instability and security challenges, from the Middle East to North Africa and toward Eastern Europe, as well as newer threats such as cyber-attacks and ballistic missiles. NATO has begun to adapt its deterrence and defence posture to the security coordinates of the 21st century, and Missile Defence will play an important role in this process. At the 2010 NATO Summit in Lisbon, Heads of State and Government committed themselves to maintaining an appropriate mix of conventional, nuclear and missile defence assets in order to strengthen defence against the full range of risks and threats to the Alliance. The Allies' objective remains, however, achievement of a Ballistic Missile Defence (BMD) capability that can provide full coverage and protection to NATO European populations, forces and territory, in accordance with the principles of indivisibility of Allies' security and NATO solidarity.*

Keywords: *NATO missile defence, European phased adaptive approach, active layered theatre ballistic missile defence.*

Background

The 2010 NATO Strategic Concept¹ describes the current security environment as one with a “wide and evolving spectrum of threats and challenges to the security of NATO populations, territory and forces”². The persistence of conflicts in certain regions of the globe, the growths in defence spending elsewhere in the world as well as the acquisition of more and more advanced military capabilities by some emerging powers continue to be a cause for concern to the Alliance. Globalization, evolving security challenges such as cyber threats, environmental constraints and lack of key resources, including disruption of access to energy sources, and the emergence of new technologies will continue shaping the future security environment in areas of interest to NATO. A whole series of vulnerable or bankrupt states, with fanatical or dictatorial governments, along with military capabilities of non-state actors, will continue to be a source of instability and potential conflicts. These factors, together with the already existing threats and challenges, such as the proliferation of weapons of mass destruction, piracy and terrorism, will create a complex and uncertain security environment.

The continued evolution of aerial platforms, as well as the proliferation of ballistic missiles, are also a cause for increasing concern to NATO, constituting a growing threat to the security of the Alliance. NATO Missile Defence can and must be an important complement to the Alliance's deterrent capabilities. This will strengthen the Allies commitment for collective defence against the threats of the 21st century. NATO Missile

¹ At the NATO Summit in Lisbon, in November 2010, the Heads of State and Government adopted the New Strategic Concept of NATO, a visionary document that provides the North Atlantic Alliance core lines of action upon 2020.

² NATO New Strategic Concept, available online at: <https://www.nato.int/strategic-concept/>, accessed on August 14, 2018.

Defence is an integrated effort that requires agile, fast, expeditionary, interoperable and sustainable forces. Furthermore, these forces must be technologically superior to the adverse ones, having the ability to dominate over the entire operational spectrum.

At the NATO Summit in Lisbon, in November 2010, Heads of State and Government, taking into account developments and changes of the international security environment, reiterated the principles of indivisibility of Allies' security and NATO solidarity and the commitment to develop a wide range capabilities to protect the Allied European populations, territory and forces. To this end, NATO has committed to maintaining "an appropriate mix of nuclear, conventional, and missile defence capabilities"³ in order to strengthen its overall posture on deterring and defending against the full range of risks and threats to the Alliance. In the Portuguese capital, a framework agreement was initially established. With the adoption, in June 2011, by NATO Defence Ministers of the Missile Defence Action Plan, missile defence has gradually become an integral part of the Alliance's Defence Planning Process.

The Chicago Summit, in May 2012, marked a new step for the evolution of NATO Missile Defence concept by declaring the "achievement of an Interim NATO Ballistic Missile Defence Capability against ballistic missiles"⁴. This provides immediate protection of NATO populations, territory and forces in the south of Europe against a possible ballistic missile attack.

The Wales Summit, in 2014, took place in a pivotal moment to NATO security. Russian aggressive actions against Ukraine culminating with illegal and illegitimate annexation of Crimea determined the Allies to approve a "Readiness Action Plan". "It provides a coherent and comprehensive package of necessary measures to respond to the changes in the security environment on NATO's borders [...], the challenges posed by Russia and their strategic implications, as well as [...] the risks and threats emanating from southern neighbourhood, from the Middle East to North Africa"⁵.

The objective of the Alliance remains, however, to achieve a "Ballistic Missile Defence capability on the basis of national voluntary contributions, integration of nationally-funded sensors and interceptors, as well as expanding the role of Active Layered Theatre Ballistic Missile Defence (ALTBMD) capability"⁶. The scope of this initiative is to ensure "full coverage and protection for NATO European populations, territory, and forces against the increasing threats posed by the proliferation of ballistic missiles, based on the principles of indivisibility of Allies' security and NATO solidarity, equitable sharing of risks and burdens, as well as reasonable challenge, taking into account the level of threat, affordability, and technical feasibility, and in accordance with the latest common threat assessments agreed by the Alliance"⁷.

³ *Lisbon Summit Declaration* issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Lisbon, available online at: http://www.nato.int/cps/en/natolive/official_texts_68828.htm, accessed August 14, 2018.

⁴ *Chicago Summit Declaration* issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Chicago, available online at: https://www.nato.int/cps/su/natohq/official_texts_87593.htm, accessed August 14, 2018

⁵ *Wales Summit Declaration* issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Wales, available online at: https://www.nato.int/cps/ic/natohq/official_texts_112964.htm, accessed August 14, 2018.

⁶ *NATO New Strategic Concept*, available online at: <https://www.nato.int/strategic-concept/>, accessed August 14, 2018.

⁷ *Idem*.

1. NATO European Missile Defence from American Perspective

For almost five decades, the United States has moved to deploy a defence against long-range ballistic missiles. First effort, called “*Safeguard*”, was cancelled just few months before being declared operational (October 1975) because Congress concluded the project was too expensive. Then, Bush Administration withdrew from the Anti-Ballistic Missile (ABM) Treaty, (which had impeded Washington and Moscow from deploying countrywide defences against ballistic missiles) and announced that “the United States would start fielding initial elements of a BMD system, starting with 2004”⁸. Bush also sought Allies for the US BMD program and reached agreement to deploy interceptors in Poland and a radar installation in the Czech Republic. Also, developing and deploying ballistic missile defences ranked high among the priorities of the Obama administration which made the international cooperation on missile defense a key priority of foreign policy. On September 17, 2009, President Obama announced that the U.S. would pursue a “Phased Adaptive Approach” to missile defense in Europe. “To put it simply, our new missile defense architecture in Europe will provide stronger, smarter, and swifter defenses of American forces and America’s Allies. It is more comprehensive than the previous program; it deploys capabilities that are proven and cost-effective; and it sustains and builds upon our commitment to protect the U.S. homeland against long-range ballistic missile threats; and it ensures and enhances the protection of all our NATO Allies”⁹ believed President Obama.

This American initiative in four stages of an adaptive-gradual approach (much better known as the *European Phased Adaptive Approach/ EPAA*)¹⁰ represents the core of the NATO Missile Defence system. Its first stage debuted in March 2011 and consisted of “deployment of an AN/TPY-2 radar to Turkey, a BMD-capable Aegis ship to the Mediterranean Sea, and the Command, Control, Battle Management, and Communications (C2BMC) upgrade to the Air Operations Centre in Ramstein Air Force Base, Germany”¹¹. The ship is equipped with an AEGIS radar system as well as with SM-3 Block IA interceptors and has been operational since 2012.

Started in 2015, the second phase implied “deployment to Romania of an SPY-1 radar and 24 SM-3 missiles SM-3 Block IB”¹². The system was declared by NATO as operational in May 2016. The interceptor, identical from the constructive point of view to its predecessor version Block IA, is equipped with an improved self-guiding head with a sophisticated sensor system.

The third stage, with another SPY-1 radar and 24 SM-3 missiles “slated to come online in Poland later this year, is being delayed due to difficulties encountered in early testing of the SM3-IIA interceptor, and likely will not be implemented until 2020”¹³. This second “*Aegis-Ashore*” site will supplement the deployments at sea and in Romania, and will

⁸ Kingston Reif, *The European Phased Adaptive Approach at a Glance*, updated: July 2017, Arms Control Association, available online at: <http://www.armscontrol.org/factsheets/Phasedadaptiveapproach>, accessed on August 10, 2018.

⁹ U.S. Department of State website, available online at: <http://www.state.gov/t/avc/rls/162447.htm>, accessed on August 10, 2018.

¹⁰ Missile Defense Advocacy Alliance, *European Phased Adaptive Approach (EPAA)*, available online at: <http://missiledefenseadvocacy.org/missile-defense-systems-2/missile-defense-systems/policy-coming-soon/european-phased-adaptive-approach-epaa/>, accessed on August 10, 2018.

¹¹ George Galdorisi, *The Phased Adaptive Approach: Phases and Components – Part 2*, available online at: <http://www.defensemedianetwork.com/stories/phased-adaptive-approach-ii/>, accessed on August 18, 2018.

¹² Kingston Reif, *The European Phased Adaptive Approach at a Glance*, updated: July 2017, Arms Control Association, available online at: <http://www.armscontrol.org/factsheets/Phasedadaptiveapproach>, accessed on August 10, 2018.

¹³ *Idem*.

extend coverage over a greater percentage of Europe. The landing and offshore versions of the SM-3 Block IIA interceptor will be completed, with superior reaction force, radius of action and ogive. These missiles will provide protection against short-range and medium-range missiles over much larger areas. After the completion of the three stages, Europe will be effectively protected from missile attacks.

The fourth stage, with 2020 time horizon, was cancelled in March 2013, thus the upgrading of SM-3 Block IIA interceptor to SM-3 Block IIB version will not be completed anymore.

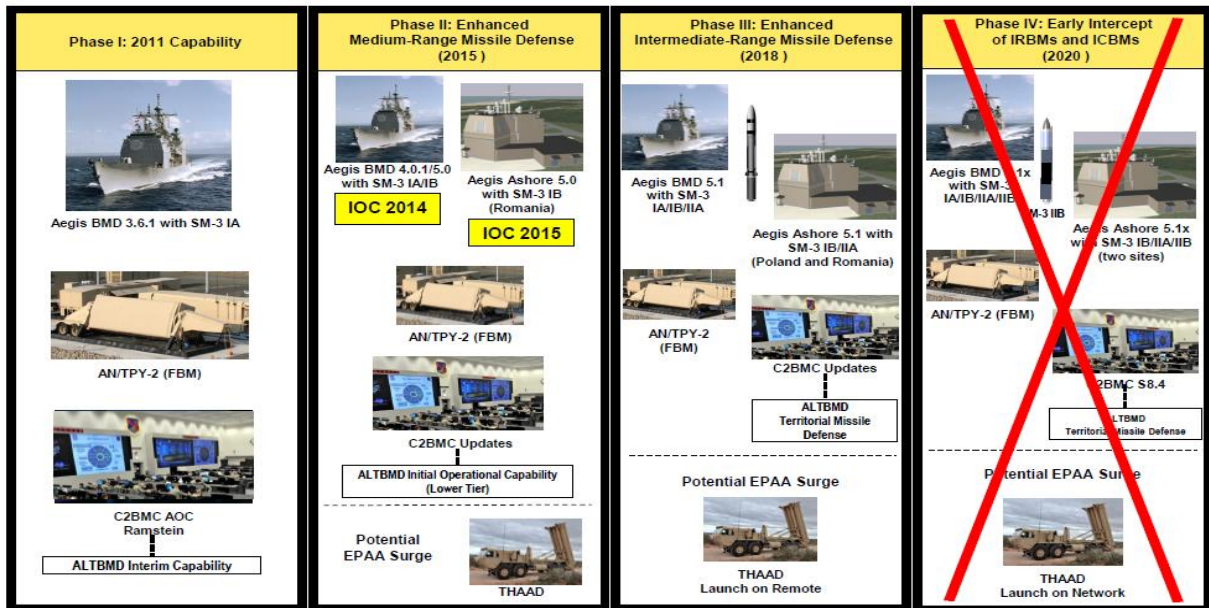


Figure 3: European Phased Adaptive Approach¹⁴

The United States has consistently advocated missile defence, thus its commitment to Europe’s security remains of vital interest to the European Allies. US expectations from European Allies are moderate, Washington being obviously aware of the limit of European resources, However, Trump administration would welcome some of the European initiatives that could facilitate a better justification in front of the Congress of their own defence spending. Given the current and foreseen economic situation of the NATO countries on both sides of the Atlantic ocean as well as the recent ‘developments’ in Eastern Europe, there is permanent and astringent demand for a better management of military resources across the Alliance. According to military specialists¹⁵, NATO European Allies have every reason to worry about their own contributions to missile defence.

There are three aspects to bear in mind. It is, first of all, the right of intervention. The Europeans have always ensuring their influence by participating in NATO weapon systems initiatives. In this respect, an important and essential argument today is the contribution to the nuclear share. Only by making available their own systems, NATO states will ensure their right to intervene. Similarly, the rule applies also to Missile Defence: contributing countries are listened with priority over not contributing ones in NATO fora.

¹⁴ Randall M. Hendrickson, “Ballistic Missile Defense Update”, August 14, 2012, available online at: <https://mostlymissiledefense.files.wordpress.com/2013/06/bmd-update-hendrickson-august-2012.pdf>, accessed on August 10, 2018.

¹⁵ Dr. Oliver Thränert, Stiftung Wissenschaft und Politik. Europäische Sicherheit 9/2011, available online at: <http://www.esut.de/esut/archiv>, accessed on August 10, 2018.

Secondly, it is about the transatlantic relationship and the Alliance's solidarity. It is expected that at one point the Americans will ask why Washington spends such large amount of money to protect the Allies, and these critical tones could increase as Europeans themselves makes little effort in this regard.

Thirdly, and not lastly, it is about Europe's protection. It would be good to have a Missile Defence option within NATO in a possible crisis that implies actors from the vicinity of European territory.

2. NATO European Missile Defence from European Perspective

NATO agreed at the Lisbon Summit to extend the role of its ALTBMD system - under construction since 2005 and intended initially only for protection of NATO operational troops against short- and medium-range missiles up to 3,000 km -- to protect NATO European territory, populations and forces against ballistic missile threats and interconnect with the US EPAA program.

What other contributions could Europeans bring to NATO Missile Defence? One option is to host on their national territories US Missile Defence facilities. Here are included not only Romania and Poland but also refers to US radars from Thule, Greenland (Denmark) and Flyingdales (Great Britain) that have been functioned for many years. Several of the European Allied countries possess interceptor missiles, which are intended only for defence of military installations, command centres, airports or sea and river ports. These systems include the PATRIOT missiles of Germany, Spain, the Netherlands and Greece. In 2010, Poland acquired PATRIOT missiles that were integrated into Polish Air Defence. Recently, Romania has decided to acquire PATRIOT Missile Defence systems¹⁶. PATRIOT system was originally developed for air defence against hostile aircraft, but in the meantime it also qualified for defence against cruise missiles and ballistic missiles with a range of up to 1,000 km. Well known for its efficiency in conflicts such as the Gulf War¹⁷, the system is mobile, so easily deployable. It is operational in almost all climatic areas and offers, under all weather conditions and visibility, active protection for individual objectives and mobile operations. The SAMP/T missiles of France and Italy can be also added to these assets. But the ALTBMD initiative is not based only on interceptors. An important role is played by early warning radars and sensors (detectors) to include here the existing radars from France, Poland or Italy as well as the American, German, Dutch, Spanish, Norwegian and Italian Navy warships equipped with radar equipment for Missile Defence purposes. Additionally, Germany can provide space sensors. All these capabilities need communication, command and control, which come to complement the ALTBMD in the sense of a "*system of systems architecture*"¹⁸. The goal pursued is that of an integrated Air and Missile Defence capability. In this respect, NATO has already begun the gradual interconnection of national weapon systems and sensors under coordination of Allied Air Command Ramstein.

However, complete protection of NATO European territory, populations and forces cannot be achieved only with these capabilities due to their relative small range of action and consequently limited areas coverage. If we consider the objective announced in Lisbon as a criterion for the implementation of the ALTBMD program, ranging from a "*point-to-point*"

¹⁶ Defence News, *It's official: Romania signs deal to buy US missile defence system*, Washington, 2017, available online at: <https://www.defensenews.com/land/2017/11/30/its-official-romania-signs-deal-to-buy-us-missile-defense-system/>, accessed on August 12, 2018.

¹⁷ Wade Boese, *Army Report Details Patriot Record in Iraq War*, Arms Control Association, 2003, available online at: https://www.armscontrol.org/act/2003_11/Patriotmissile, accessed on August 12, 2018.

¹⁸ Dave Kiefer, *ALTBMD*, available online at: <https://ndiastorage.blob.core.usgovcloudapi.net/ndia/2011/IAMD/DaveKiefer.pdf>, accessed on August 12, 2018.

to an “*extended area defence*”, NATO European countries should consider acquisition of US interceptor systems such as THAAD or SM-3. THAAD systems, could intercept short-range and medium-range ballistic missiles in the upper atmosphere unlike PATRIOT systems designed only for punctual defence of large areas. SM-3 have a higher range of action than THAAD missiles, thus can intercept ballistic missiles during mid-flight phase, outside of atmosphere. However, acquisition programs for THAAD or SM-3 systems may be difficult to NATO European Allies as almost all of them have funding problems within their defence budgets. Everywhere funding savings are required, thus there is a big question mark on possible European investments in modern missile defence systems. A comparison of costs per interceptor unit shows that modern systems require high spending. While a PATRIOT PAC-3 interceptor costs about 3.3 million US dollars, the price of a THAAD missile is about 9 million US dollars. Something higher is the cost of a SM-3 Block IA missile, about 10 million US dollars. Furthermore, there are considerable costs for necessary sensor system as well as for hardware and software support.

As a possible solution for dilemma of limited financial resources and rising European demand for Missile Defence, NATO European countries might collectively fund and share a limited number of defensive units. Missile defence systems can “qualify” for “smart defence” option as they are dedicated to be employed against evident threats, in the event of a possible crisis, when all NATO Allies could be involved. However, “smart defence” should not be overestimated. Let’s consider, for example, that the Navies of some European Allied countries have decided to share acquisition costs and alternative employment of SM-3 interceptors. Then, these services would take the burden of enormous national spending on their “shoulders” to qualify their ships as platforms for these interceptors. Not only major adaptations should be made, but also comprehensive upgrades to electronic and detection systems have also to be considered. Besides, it would be a question of which generation of defensive systems should be purchased.

In the case of the SM-3 missile, this could be the Block IA version, already in use with the US Navy, but then European Allies would purchase interceptors that will soon be overtaken by new versions. Moreover, from the planning point of view, it might be considered too early to take into account European contributions that go beyond the previous ALTBMD plans and think seriously about the protection of the populations and national territories. This is also because the real reimbursement possibilities for the projected American elements are not yet clear enough. As long as American expectations from Europeans are only of a symbolic nature and not associated with concrete military plans, there is a problem for Europeans of public justification of the related costs.

Instead of relying on “smart defence” for interceptors, maybe there is another option. In this respect, the frigates of NATO European Allies could be firmly integrated into early warning and fire control within the missile defence system. The Spanish, Dutch, German and Norwegian warships have already been involved in naval manoeuvres using their on-board detection systems, and US AEGIS vessels have supported them to determine target coordinates. French, British, Italian and Danish warships already have modern radars. All these capabilities could be developed from common or shared funds, such investment being perhaps better justified than the acquisition of interceptors.

Conclusion

The North Atlantic Alliance has begun to adapt its doctrine of deterrence and defence to the security coordinates of the 21st century. Missile Defence will play an important role in this process. In the United States, overlapping support to these intentions is stable, despite financial problems. This should not surprise us as long as the defence against ballistic

missiles represents to US an essential condition to maintain its global influence. Even though Trump Administration is increasingly concerned of the multitude of domestic problems, it does not mean that America is willing to abandon its role as a world power. On the contrary, it is more likely that in the years to come, Washington will increase its expectations from its European Allies in the field of Missile Defence, even if exact contours of their exigencies are not yet visible.

On the other hand, Missile Defence tends to become a key element of collective defence. In making this decision two aspects can be considered as essential. First, NATO needs to adapt to a constantly changing security environment, including the proliferation of ballistic missiles and nuclear weapons. Thus the Alliance's deterrence options must change. They can no longer relate to the conventional and nuclear offensive potential. Defensive options need to be cumulated if NATO wants to retain its capacity to act in the future in the sense of maintaining international order.

Secondly, both in Lisbon and in Chicago, emphasis was placed on common missile defence to demonstrate cohesion with a new military project. This is necessary because the military capabilities of the Allies are becoming more and more dissipated. With the ambitious NATO Missile Defence initiative, the Alliance's solidarity might be once again strengthened.

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USE OF CBRN DEFENCE STRUCTURES IN CBRN CONSEQUENCES MANAGEMENT

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Abstract: *Military operations are planned, prepared and conducted in conditions of CBRN hazards, risks and threats existence. Today’s hybrid conflict - characterized by complex operating environment security risks - CBRN range is enhanced by the possibility of executing attacks by unconventional and asymmetric forces, not only in dealing with conventional forces but also on the civilian population in the conflict zone, in order to achieve the ultimate goal which is to cause withdrawal of joint, integrated multinational extra-regional force. Based on these considerations, the forces engaged in hybrid conflict, supported by CBRN defense forces, must be able to manage possible incidents in the area of operations by applying appropriate measures in order to limit the consequences of CBRN incidents, to save the life of military personnel and civilians and to limit the effects and restoring affected environmental factors.*

Keywords: *consequences management; CBRN incident; CBRN dangers, risks, threats; CBRN defence command and control; CBRN support.*

Introduction

In the current international security environment NATO is deeply concerned about the proliferation of the weapons of mass destruction, particularly about nuclear weapons and their means of delivery by states and non-state actors. This issue is considered to be a real threat to populations, territory and forces of the Alliance so that weapons of mass destruction (WMD) proliferation remain a stringent international priority.

CBRN weapons of mass destruction attacks which produce as effect command and essential operation function disruption, large surfaces CBRN contamination and strong psychological impact of combatants through suffering and losses dimension demands immediate answer of commanders and available CBRN specialized force for CBRN consequences management (CBRN-CM). CBRN-CM includes planning and preparation activities, response and restore for CBRN WMD attacks effects.

Reaction after this type of incident is based on *interoperability in CBRN defence domain* principle, which states that interoperability requires synchronization between military and civilian organizations, in order to identify and coordinate the effort of main actors that possess real tasks and capabilities in limitation of CBRN incident consequences.

NATO’s CBRN defence doctrine mention *comprehensive approach in CBRN defence domain*. This concept is used to describe the needed competences to manage CBRN threats and incidents. Politics recognize NATO approach related to conflicts such as coherent and

whole appliance of different tools of alliance effects that will conduct to global effects and desired results¹.

Specifically, this requires political, military and civilian coordinated measures to prevent proliferation and protect population, territories and NATO Forces of the CBRN incident effects, including recovery if an incident occurs.

CBRN defence staff officers' tasks are to integrate, conduct, coordinate and evaluate CBRN operations in order to mitigate CBRN effects on forces, to restore operation essential affected functions, to create desired conditions to successfully complete of planned objectives.

Thus, for an efficient CBRN-CM, specialists apply CBRN defence principles (avoid contamination, protection and decontamination), integrate CBRN information management (by realizing CBRN warning and reporting system - CBRN W&RS) and conduct consequence management process to support the operation. At tactical level, CBRN operations include CBRN offensive operations in controlled area (e.g. conducting raids having as objectives destroying enemy's facilities, infrastructure, or CBRN weapons of mass destruction (CBRN WMD) assets or forward detachments to secure important objectives), CBRN defence active measures (e.g. anti-aircraft defence or field artillery engagement in order to neutralize/destroy CBRN WMD vectors) and CBRN defence passive measures to prevent and defend forces against CBRN weapons and effects to support operations in CBRN conditions/environments.

In the armies of the democratic states CBRN defence passive measures are predominant and are applied following the principle of avoiding CBRN risks by personnel and equipment protection in case of CBRN risks which cannot be avoided and decontaminated. In this respect, an effective CBRN defence is intending to reduce the effects and vulnerability of own forces and provides an operational tempo which complicates enemy's targeting process.

Thus, CBRN defence passive measures includes: CBRN reconnaissance and screening (survey), CBRN warning and reporting, anticipation, evaluation and shaping of CBRN risks, personnel and equipment protection but also radioactive, biological and chemical (RBC) decontamination.

1. Conceptual aspects regarding CBRN consequences management. Origin of syntax

The Consequence Management concept is used relatively recently in Romanian literature, being borrowed from American literature². The Center for Strategic Defense and Security Studies, the scientific research structure of the "Carol I" National Defense University from Bucharest, initiated a scientific research project on the consequences management issued in the course of 2009. The necessity came as a result of requests from central structures The Department for Defense and Planning Policy - DPAP) and negotiations that these central structures had with the US Army representatives to implement the US Armed Forces Access Agreement temporarily stationed in Romania. During the negotiations, US Army representatives were interested in the support and facilities that the Romanian state could be able to provide in the event of a terrorist attack with weapons of mass destruction, in the event of natural or accidentally produced disasters.

This research project shows how Consequence Management is a phrase used for the first time in 1995 in the US Doctrine³. As a result of the negotiations with the American

¹ AJP-3.8(A) *Allied Joint Doctrine for Chemical, Biological, Radiological and Nuclear Defence*, Ratification Draft 1, Annex D, 2012, p. D-1.

² Constantin Moștofle, Grigore Alexandrescu, Cristina Bogzeanu, *Managementul consecințelor*, Editura Universității Naționale de Apărare „Carol I”, București, 2009, p. 7.

³ *Ibidem*, p. 11.

partner and within NATO on various topics of interest, as well as the use of a conceptual framework and common terms, the phrase was taken up in the Romanian literature as well.

Here is how this concept is defined in NATO's Allied Doctrine for CBRN Defense⁴: "Consequence Management: Measures taken to mitigate the damage, loss, hardship and suffering caused by catastrophes, disasters or hostile actions. Note: It also includes measures to restore essential services, protect public health and safety and provide emergency relief to affected populations".

In order to move on and delineate this definition in relation to the subject proposed in the article, I will consider the military operations that need to be planned, prepared and executed so that the forces are capable of acting not only against conventional attacks but also being effective in conducting prolonged operations, to maintain its ability to fight in a CBRN environment.

Based on these considerations, I will highlight the particularities of managing CBRN consequences in different situations. By resorting to the analysis and synthesis method, I will customize the situations in which the army could act individually or in cooperation with other institutions in order to limit the effects of CBRN substances.

2. Use of CBRN substances in recent conflicts

The existence of instability in the entire Middle East and North Africa region, particularly in Syria, Libya, Iran and Iraq, as well as threats from extremist groups, shows that the security of the region has repercussions on NATO's member states security.

The risk of using CBRN WMD by Iraq in the two Persian Gulf wars, in 1991 and 2003 (as it had done before in the 1980-1988 during Iraq-Iran war and against the Kurds in the north of the country) forced the coalition's forces to prepare and conduct CBRN operations, especially under chemical and biological conditions.

Also, the evolution of the Syrian conflict revived one of the greatest concerns about the threat of chemical weapons/munitions. The use of sarin gas in the Syrian War (in the Ghouta area, a suburb of Damascus⁵) on August 21, 2013 brings to the present the increasing need for conventional forces the existence and ability to plan and conduct military operations under CBRN conditions/ environment.

The United Nations Mission report issued in 2014 stated that in August 2013 Sarin neuroparalytic agent was widely used on the outskirts of Damascus, resulting in numerous casualties, particularly among civilians, including children. The same report claims that there is clear evidence that chlorine has been systematically and repeatedly used as a weapon in northern Syrian villages in April and by August 2014⁶.

Syrian rebels were accused by a report cited by Damian McElroy that they used different chemicals, including sarine, to achieve their goals⁷.

The Islamic State terrorist organization (ISIS) was nominated directly that on various occasions in 2015 it used chlorine and a product inferior to the Kurdish fighters⁸.

⁴ AJP-3.8(A), *Allied Joint Doctrine for Chemical, Biological, Radiological and Nuclear Defence*, Ratification Draft 1, Annex D, 2012, p. D-1.

⁵ The UN Investigation Commission on Damascus Suburban Events has definitely established that chemical ammunition has been used with sarine, but it has not been able to establish with certainty which actor used these weapons. Both Syrian government and opposition forces deny any responsibility in their use. The full report of the UN Investigation Commission available online at UN's official website: www.un.org/disarmament/content/slideshow/Secretary_General_Report_of_CW_Investigation.pdf, accessed on November 02, 2018.

⁶ AJP-3.8(A) *Allied Joint Doctrine for Chemical, Biological, Radiological and Nuclear Defence*, Ratification Draft 1, Annex D, 2012, p. D-1, p. 832.

⁷ Damian McElroy, *UN accuses syrian rebel of chemical weapons use*, The Telegraph, May 6, 2013 available online at: www.telegraph.co.uk accessed on October 15, 2018.

In 2016, it was stated for the first time that President Bashar al-Assad would be responsible for the use of chemical weapons in a UN report and the Organization for the Prohibition of Chemical Weapons, attributing responsibility for several attacks from 2014-2015. The same quoted source states that orders to use chemical weapons would come from the top of state power⁹.

The immediate effects of these attacks are not fully known, and it is hard to tell at this time the number of victims affected as a result of these incidents, this varying according to the sources accessed. The most alarming thing is a new alarm signal, namely "toxic stress" with consequences and long-term effects due to the use of weapons of mass destruction.

It is manifested beginning with the belligerent forces exposed at the time of the attack and immediately following, continuing with the civilian population that becomes the collateral victim and ending with the staff of the various agencies and organizations that get a residual exposure. Without being a new one, this concept have been experienced by millions of combatants in the world's first conflagration, and returns to the chessboard with the same triggering factor, only to another type of conflict, a hybrid version.

The Euro-Atlantic Alliance was forced to react in a manner adapted to the new challenges.

In order to have a comparison, we will briefly outline the organization of the CBRN support force to support multinational operations (example: the multinational military operation deployed by the US-led coalition in Iraq in 2003) and support for NATO operations.

In the multinational operations carried out so far, different CBRN support forces have been tailored differently, depending on the level of CBRN threat in the operation area. Thus, in the first phase of the Second Persian Gulf War (Iraq 2003), Romania participated among other NATO and non NATO armies in an international antiterrorist operation "Enduring Freedom" sending contingents into the territory of the State of Kuwait (2002-2003). Among participating countries there were Romania, Czech Republic, Germany, Slovakia, Ukraine, and United States of America.

Romanian Armed Forces participated in the military actions in Theater of Operation with CBRN Defense unit, CBRN Defense Company size, reinforced with logistical elements for self-support in the theater. This unit has been organized on three platoons: CBRN Reconnaissance, RBC Decontamination and Logistic. At that time (March 2nd to October 16th, 2003), the Romanian unit was integrated in the Combined Joint Task Force - Consequence Management (CJTF-CM)¹⁰.

The Czech Republic had a significant contribution gradually consisting of the following structures: reinforced 9th NBC Company, 4th NBC Detachment, 1st NBC Battalion, and 1st Czech-Slovak NBC Battalion¹¹.

Also, the establishment in 2003 of a NATO-led specialized structure such as CBRN Multinational Defense Battalion demonstrates the importance the Alliance demonstrates to the capability of managing the consequences of a CBRN incident and the freedom of action of its forces.

⁸ Associated Press in Iraq, *Islamic state used chemical weapons against Peshmerga, Kurds Say*, The Guardian, March 14, 2015 available online at: www.theguardian.com accessed on October 15, 2018.

⁹ Piece of information available online at: www.hotnews.ro/stiri-international, accessed on January 14, 2017

¹⁰ Information from my own experience as a result of my participation in Iraqi Freedom operation in which I led CBRN Reconnaissance Platoon.

¹¹ Captain Dipl. Eng. Radim Zahradníček, Lieutenant Colonel Assoc. Prof. Dipl. Eng. Pavel Otrřisal, Ph.D., Colonel Assoc. Prof. Dipl. Eng. Zdeněk Skaličan, Ph.D., *CBRN Consequence Management: New approach and possibilities of participation of chemical units*, January 2016, available online at: www.researchgate.net accessed on November 01, 2018.

3. Potential CBRN incidents scenarios in the future

Analyzing the possibilities of using WMD CBRN in a future conflict, I believe that an actor who owns these sorts of weapons can use them in the following ways: Cyber-attacks targeting facilities or critical infrastructure elements that can generate a CBRN event in the operations area; Attack on combat, combat support or combat service support forces; Striking and damaging (accidental or deliberate) industrial CBRN facilities disposed in the area of operation; Attacks on critical infrastructure elements (ports, airports, communication nodes) with ADM CBRN; CBRN IED attack.

In this context, an attack with weapons of mass destruction or chemical, biological, radiological or nuclear terrorism would result in significant losses among combatants and/or civilian populations in the conflict area, devastating psychological effects, and would significantly distort the logistics system. Also, the environmental consequences will be unimaginable and long-term effects, some of which are even irreversible and irreparable.

Here are some of the peculiarities of approaching CBRN risks from the perspective of interagency integrated action, with reference to military CBRN agents, industrial toxic materials and improvised explosive devices.

3.1. CBRN Agents

Toxic chemicals have been used in the past, and their use in future conflicts cannot be ignored. At the tactical level, chemical agents are used for military purposes because of the immediate effects on unprotected personnel. They harass, incapacitate or cause significant losses among the fighting forces; prohibit or delay combat activities due to air, land, combat equipment, supplies and facilities radioactive, biologically and chemically contaminating.

The Convention on the prohibition of chemical weapons occupies, in the treaties and agreements in the field of international humanitarian law, a very special place. It is the first universal disarmament treaty aimed at eliminating an entire category of weapons of mass destruction, making it a real breakthrough for regional and global security. The main objective of the Convention is the general prohibition of all chemical weapons. Therefore, the Convention prohibits both the use of such weapons and their development, production, storage and transfer. The Convention also requires States to destroy their own chemical weapons, those abandoned in other States, and chemical weapons production facilities. In order to achieve its objectives and purposes and to ensure the implementation of its provisions, the Convention decided the establishment of the Organization for the Prohibition of Chemical Weapons (OPCW), based in The Hague (the Kingdom of the Netherlands) and having as its members all States Parties (193 member states)¹². Despite its efforts, there are still enough states or non-state actors in the world that could use them to achieve tactical, operational or strategic goals.

In the light of the above, I consider that CBRN agents can be used in one of the following situations:

- In the struggle of conventional forces, against combat forces, to cause significant loss of personnel, banning maneuvers, decreasing the morale of forces and commanders;
- Against the military forces and the civilian population, in a non-discriminatory manner, in order to generate difficult situations of crisis management;
- Against civilians in the conflict zone or nations supporting the military operation in order to erode its confidence in the ability of governments to effectively protect their civilian population on their own territory, to erode the political and economic support and ultimately the withdrawal of forces.

¹² Official website of the Organization for the Prohibition of Chemical Weapons, available online at: www.opcw.org, accessed on November 05, 2018.

Most likely, such a scenario will be executed by terrorist elements affiliated with the conventional opponent. In such situations, investigations of the CBRN event call for integrated and coordinated intergovernmental cooperation and focus on tracking and finding suspects of a terrorist attack. Complex forensic investigations, site investigation, and tactical deployments are required.

Scenario no. 1 - Attack with non-persistent chemical agents using Sarin gas (neurotoxic agents) to civilians in the conflict zone or on the national territory of the forces involved in the operation

In order to *prevent* a chemical attack with Sarine, measures are aimed at preventing the import of chemical weapons of mass destruction, the ban on weapons production, and the banning of attempts by identifying areas with potential of terrorist attack.

Victims of the attack will require medical treatment and hospitalization, total chemical decontamination and permanent monitoring. The psychological impact will be significant, and the affected civilian population from the chemical attack area will be evacuated, sent to shelters, and counseled psychologically.

Actions required to be taken urgently include: isolation of the attack site and identification of the hazard type; planning and determining the way of action by the institution in charge of intervention in the event of a terrorist attack; scenario preservation, avoidance of hazard spreading, total chemical decontamination operations and damage management as well as monitoring.

Scenario no. 2 - Attack with persistent chemicals agent using Mustard Gas (blister agents)

In order to *prevent* a chemical attack with mustard gas, measures are aimed at preventing the import of chemicals, banning the production of chemical weapons, procuring means of use (airplanes and pilots) and identifying and overseeing areas with a terrorist attack potential.

Victims of the attack will require medical treatment and hospitalization, total chemical decontamination and permanent monitoring. The psychological impact will be significant, and the civilian population in the risk area, in the wind direction, will be evacuated, sent to shelters and counseled psychologically.

Actions required to be taken as a matter of urgency include: alert and inform the population, isolate the area and identify the type of danger; traffic and access control; planning and determining the way of action by the institution responsible for intervention in the event of a terrorist attack; identifying support resources and requests for assistance; preserving the scene, sampling chemically contaminated samples, avoiding the spread of the hazard, total chemical decontamination operations, and driving environmental remediation.

3.2. Toxic Industrial Materials (TIMs)

Toxic industrial chemicals (TIC) are considered to be chemicals that can pose a threat to both peace and war time. This type of danger can occur during military actions, sabotage activities, terrorist attacks, industrial accidents, or during transport activities.

The occurrence of a CBRN incident as a result of the release of toxic industrial nuisances may have disastrous consequences for the civilian population and military personnel in the operations area. Granting medical care in such situations is extremely difficult.

Toxic industrial chemicals create a toxic outbreak in the incident area. Depending on the weather conditions (temperature, wind, and precipitation) a mass evaporation occurs, which leads to the appearance of a toxic cloud that acts in dangerous concentrations in the wind direction.

Most likely, such a scenario will be put into practice by unconventional or asymmetric (terrorist) elements affiliated with the conventional opponent. In this case, CBRN incident investigations also require integrated and coordinated interagency co-operation and focus on tracking and finding suspects of the attack.

The search for suspected persons that produced the terrorist attack and sampling evidence in an affected industrial area will be made immediately after the occurrence of the incident and after the personnel of the engaged assigned agencies have been provided with appropriate personal protective equipment and their chemical decontamination operations were organized and prepared.

Scenario no. 1 - Chemical Attack using Toxic Industrial Chemicals (TICs)

In order to prevent an attack on a chemical risk industrial objective, the measures are aimed at preventing the helicopter and explosives acquisition from terrorist groups as well as the recognition activities interdiction of targeted areas with terrorist attack potential.

Victims of the attack will require evacuation, preventive medical treatment, total chemical decontamination and permanent monitoring. They will suffer mental and physical trauma, burns, toxic smoke inhalation, severe respiratory problems, injuries, and ultimately some will come into a coma. Urgent decontamination measures as well as short or long term medical treatments are required, depending on the degree of exposure of the victims, as well as specialized counseling due to the major psychological impact. For the civilian population in the area of the incident, shelters appropriate to the situation will have to be provided.

Actions required to be taken as a matter of urgency include: site isolation and hazard identification, planning and determining how the decision-maker acts during the incident, fire-fighting operations, efforts to limit the consequences of the attack, total chemical decontamination, putting into use the place where the terrorist attack took place, and actions to restore the environmental indicators affected by the terrorist attack.

Extending decontamination operations will be made depending on the industrial toxic chemicals involved in the incident. Tracking, monitoring and sampling in a facility like a large industrial port will be a challenge. Putting the affected ports and refineries into service will also be major challenges. Major impacts on the environment will also require special efforts to restore ecological balance and to remove the consequences of the incident.

In conflicts, actions are often carried out in urban environments, where industrial toxic products/materials, especially industrial toxic chemicals, are present. Some of the chemicals may significantly influence the spectrum of military actions and the evolution of the situation in the area in the event of an incident. That is why I strongly consider that action needs to be carried out frequently under CBRN conditions generated by the existence of these risks.

An emission of TIC during the night is the most dangerous. The danger of spreading in the wind direction at night is much higher than in the daytime.

In order to support the planning process, CBRN defense officers must carefully assess the operation area, identify the TIM objectives and determine the minimum dangerous distances in the wind direction (day or night), from the processing or storage sites. In military planning process, commanders and subordinates integrate considerations about these potential dangers during intelligence preparation of the battlefield.

3.3. Unexploded ordnance and improvised explosive devices CBRN (UXO & CBRN IED)

In this scenario, victims will be registered as a result of one or more simultaneous attacks and include civilians, emergency personnel (firefighters) and suicide bombers at explosive detonation locations as well as in nearby areas. There will also be a disturbance of the transport system and vehicles, economic losses caused by the closure of the areas affected by the explosion for repair. Serious problems related to the treatment of burns and

psychological therapy of victims, permanent loss of hearing and post-traumatic stress disorder will arise. At the same time, it is necessary to evacuate affected persons and to assess the likelihood of other threats. Most likely, such a scenario will be put into practice by asymmetric elements (insurgency, guerrilla, separatists) affiliated with the conventional adversary.

In this situation also, CBRN incident investigations challenge integrated and coordinated interagency co-operation and focus on tracking and finding suspects of the attack.

Actions require travel, searches, site inspecting, forensic investigations, evidence gathering, and investigating suspects and witnesses by specialized judiciary staff. The search for suspected persons to produce the terrorist attack and evidence in an affected industrial area will be made immediately after the occurrence of the incident and after the personnel of the agencies to which the mission is assigned have been provided with appropriate personal protective equipment and their chemical decontamination operations were organized and prepared.

Scenario no. 1 - Explosive bomb attacks using CBRN improvised explosive devices (CBRN IED)

To prevent such attacks, the efforts make it necessary to detect the terrorists' plan in the stage of preparation for the attack. There is a need for predictive, monitoring, estimation activities involving intelligence analysts. This includes tracking and finding people suspected of producing a terrorist attack. Complex forensic investigations, site investigation, and tactical deployments are required.

Response actions call for zone isolation and hazard identification, determination, planning and course of action during the accident, preservation of the accident site, driving efforts to minimize danger, the efforts of those responsible for decontamination operations and the efforts to remedy the affected area, its monitoring and reconstruction.

Explosions can create and spread dangerous liquids, and vapors can condense as liquid droplets in cold air. The greatest risk of producing massive TIC emissions is the fact that staff cannot leave the contaminated area and exposure to vapors or the explosion. Military gas masks and protective suits provide only limited protection against TICs.

The CBRN EOD Group is the specialized force at the commander's disposal to deactivate/ neutralize conventional/improvised explosive devices generating a CBRN hazard. Even if these units are able to solve the incident without additional support, I consider that it should be provided support elements in order to ensure security. I also believe that these units have to be engaged in the operation together with CBRN control and management forces with positive impact on operation evolution. In the event of accidental release of CBRN substances CBRN Defence elements provides specialized support – CBRN reconnaissance and RBC decontamination – in support of CBRN EOD operations.

I also appreciate that an essential role in maintaining the mobility of our own forces by avoiding the CBRN consequences and preventing the spread of contamination is given by previous information reports which must contain a description of the type of ammunition and the markings on it which should be interpreted/deciphered by CBRN specialists. Moreover, I consider as being extremely opportune at this time that the action of the CBRN EOD teams should be organized in such a way that it completes with the obtaining of undisputable evidence/testimony for the criminalization of the aggressor in the international court.

To conclude, regardless the type of CBRN incident, the most important action is immediate evacuation outside the risk predicted area. It is vital that forces understand that the best protection is the immediate exit from exposure to the vapor area of toxic chemicals because they are rapidly replacing oxygen in the environment and personal airways protective equipment become, many times, totally unusable. For these situations it is necessary to adopt

permanent operating procedures and conducting rehearsals in the preparation stage of the operation.

As part of the measures taken to protect the life and health of both military and civilians and the environment, one of the most important is permanent air control to prevent pollution, acute and chronic intoxications, and in other situations, explosions and fires. Specific rapid CBRN analysis methods should be known and used to permit determination of variations in the toxic substances concentration determined at very short intervals, sampling and processing procedures as well as the appropriate use of reconnaissance and laboratory equipment. For this purpose, a CBRN Combined Joint Task Force – Consequence Management (CBRN CJTF-CM) is required to provide appropriate support for military and civilian.

4. Aspects of inter-institutional cooperation on CBRN defense at national level

In the case of a military operation carried out on national territory, the armed forces will most likely conduct combat operations in an area of operations where other structures within the national defense system with responsibilities in the management of CBRN consequences also operate. Thus, the structures of the General Inspectorate for Emergency Situations, Gendarmerie, firefighters, police, environmental protection agencies, local administrations, etc. can be found in the joint operations area.

Whether a military force acts outside the national territory in a joint multinational operation or on the territory of a NATO allied country, it will be necessary to cooperate with local authorities with those host country structures with responsibilities in this field.

Structures responsible at national level for CBRN consequence management are the following:

a) The *General Inspectorate for Emergency Situations (in Romanian: Inspectoratul General pentru Situații de Urgență - IGSU)* is the national structure with responsibilities for disaster management, disaster response, fire and other. This structure was established in 2004 following the merger of the General Inspectorate of Military Firefighters and Civil Protection Command, institutions under the coordination of the Ministry of Interior. Among the IGSU's competences I would like to mention¹³:

Decontamination of the population, with specialized means, management of the personnel decontamination points, technical equipment and equipment recognized in advance; Neutralizing the effects of hazardous materials; Monitoring, evaluation, investigation of the causes of emergency situations; Evacuation of platforms, population or endangered goods, by ensuring evacuation measures, installation of flooded/refugee camps, participation in population transport; Warning the population, notifying public authorities about the possibility or imminence of emergency situations.

b) *Mobile Emergency Service for Resuscitation and Extrication (in Romanian: Serviciul Medical de Urgență, Reanimare și Descarcerare - SMURD)* operates within the County Inspectorates for Emergency Situations, having as aviation operator the aviation structures of the Ministry of Internal Affairs, in collaboration with county, regional and local public hospitals.

National Environmental Protection Agency (in Romanian: Agenția Națională pentru Protecția Mediului - ANPM) is a governmental structure under the authority of the Ministry of Environment with competences in the implementation of environmental protection policies and legislation. Among the relevant areas of competence, I would like to mention dangerous

¹³ Areas of proficiency have been taken from the IGSU's official website, available online at: www.igsu.ro accessed on October 31, 2018.

substances and chemicals, radioactivity, industrial emissions, waste, biosecurity, and other (incidents involving them).

In this context, the *Armed Forces CBRN Defense units* could contribute to the overall effort through:

- Discovering the enemy's preparations for the use of CBRN WMD/striking CBRN industrial facilities;
- Providing prevention and protection of own forces in order to maintain the freedom of action and the capacity to carry out missions under CBRN conditions/environments;
- Mitigating the effects CBRN incidents;
- Multiplying the fighting power of own forces in the tactical space;
- Providing support for civilian authorities in resolving emergency situations.

In this respect, I believe that cooperation between these institutions as well as with other governmental and non-governmental actors can be achieved through:

- The use of joint procedures by the CBRN defense units in the armed forces and by the other agencies in situations where they operate in a joint operation area;
- The exchange of relevant information within the information community;
- Providing mutual support on different segments of the operation in which an actor leads the intervention and the others support;
- Including a representative (usually a CBRN defense officer) from the headquarters of the military units to the emergency committees, for cooperation with the other agencies, and for the provision of expertise in CBRN defense for the purpose of correlating and optimizing actions and interventions;
- developing protocols and cooperation plans with the other agencies with responsibilities in the field.

In all circumstances, I believe that military operations are very unlikely to take place in a purely military environment.

Acting in such a complex environment and comprehensive framework, there is mandatory for conventional forces to act for CBRN consequence management in accordance with some harmonized and common agreed procedures along other structures with similar interests in the theater of operations. This will only be possible in the context of the principle of technical and technological, procedural and actional interoperability.

5. Engaging CBRN defence structures for CBRN consequence management

The WMD proliferation and the existence of toxic industrial materials (TIM) in the operational environment require the existence of specialized CBRN structures capable of acting under CBRN conditions/environments.

The CBRN defense comprises three pillars: *prevention, protection, and recovery*¹⁴.

To cover **Pillar I - Prevention** of CBRN defense, which must be carried out in the pre-incident phase of CBRN defense management, activities within the functional areas are both planned and unplanned, as follows:

- CBRN surveillance is activated and CBRN reports are issued through the CBRN Warning and Reporting System (CBRN W&R System) using the Communications and Information System (CIS) in accordance with standard operating procedures (SOPs);
- Physical protection is planned and can be done appropriately and efficiently at the individual, collective, equipment, materials and critical infrastructure level;

¹⁴ ***, AJP-3.8(A) *Allied Joint Doctrine for Chemical, Biological, Radiological and Nuclear Defence*, Ratification Draft 1, Annex D, 2012, p. D-1.

- Hazard prevention measures are activated; these refers mainly to the occupation and use of shelters and collective protection systems (CBRN COLPRO), the preparation of military vehicles and equipment, the protection of food, water and ammunition;

- CBRN medical countermeasures and pre-treatment are applied, focusing on prophylactic actions and maintaining individual and collective hygiene.

Simultaneously with these measures, RBC decontamination missions are planned to be executed according to the plan, in part or in some other way, depend on the specific situation. Analyzing the involvement degree of CBRN defense forces on missions, it can be noticed that for this phase the structures that are integrated into CBRN W&R System from all echelons and logistics - including the medical service and decontamination structures required to support them -, are engaged while actions of CBRN support force are only planned.

For the implementation of **Pillar II - Protection**, during the CBRN incident, activities within the five functional areas of the CBRN Defense are amplified, meaning that individual and collective protection is attained at the level planned by correlating MOPP4+ / COLPRO IN USE, while granting medical support in CBRN environments. At this point, elements of the CBRN Support Force are engaged both for the proper operation of COLPRO and for supporting medical operations within the rescue and evacuation detachments.

The information flow is enhanced by the transmission of CBRN reports from sources/sensors that observe/detect the CBRN incident to analysis and prognosis sub-centers and centers. The reports are evaluated and used to perform the contaminated areas prognosis and to alert the forces in the predicted hazard zone.

At this stage, the CBRN support force is prepared to intervene in order to limit the consequences of the CBRN incident, through the execution of CBRN reconnaissance and total RBC decontamination operations.

For the implementation of **Pillar III - Recovery**, the CBRN support force is engaged on missions to limit and remove the CBRN incident consequences. Thus, CBRN reconnaissance, identification, monitoring missions, CBRN information management, and sampling suspected of being contaminated, as well as risk management process are conducted. CBRN reconnaissance units provide marking contaminated areas, determine the directions and reserve areas for units evacuation, interdict units disposal and contaminated area crossing.

It also proposes the alternative routes avoiding contaminated area, establishes alignments for putting on individual protective equipment in order to crossing the contaminated area (in case of contamination with non-persistent chemical agents). The reports are generated and transmitted within the CBRN information flow to define the real contaminated area and transmit it to subordinate units.

Missions are coordinated, conducted and evaluated by elements of CBRN Defence Command and Control elements. They propose to the commander the approval of the RBC decontamination priorities and coordinate the affected units' movements for the execution of total RBC decontamination. Subsequently, it organizes the general framework for staff rehabilitation and CBRN equipment maintenance, requests, receives, analyzes, centralizes and transmits up-to-date information reports (CBRN SITREP) and requests reports for CBRN equipment.

After CBRN support forces have fulfilled their missions, they keep records of the contaminated areas, organize and coordinate their monitoring/reconnaissance, and ensure the transition/transfer of responsibility to the unit that conducts replace in place action or to civilian authorities presented in the area.

Conclusion

In view of the above-mentioned elements of analysis, I can safely say that the activities carried out by the CBRN specialized forces are extremely important because they aim at achieving extremely noble objectives. First of all, effort and resources are directed to saving the lives of affected people. This extremely important goal is achieved by immediate evacuation and surviving techniques in CBRN environments. Persons affected will be subject to medical decontamination procedures and will be provided with long-term medical assistance and treatment. Further actions are aimed at preventing contamination and disease by reducing or preventing exposure to CBRN risks, which can cause injury, contamination, illness. This goal is achieved through measures to secure perimeters and control contaminated areas in order to prevent the spread of contamination.

Secondly, the activities are directed towards resource protection. Warning and reporting in the event of a CBRN WMD attack, rapid decontamination actions, and material resources protection can help to recover them. Good planning of operations and adequate preparation of the specialized elements with responsibilities can contribute to effective intervention and restoration of essential services in the area of incident occurrence in short time.

Then, the consequence management process is based on and interacts with the other domains of military operations: developing documentary base, planning and execution. Continuous monitoring and analysis regarding the CBRN passive action implementation, the risk mitigation measures taken timely will allow commander to understand the engagement area and finally will contribute to the achievement of desired effects.

In conclusion, I appreciate that the forces involved in joint, integrated and multinational operations in the current hybrid conflict must be able to manage possible CBRN incidents in their operations area by effectively implementing mitigation measures (personal losses, material damage) resulting from hostile actions executed by the conventional, unconventional and asymmetric opponent or as a result of natural disasters.

When civilian areas have not been evacuated, it is necessary to alert the population, to take the first protective measures, to limit the movements, to mark dangerous site, to avoid panic among the population, and to alert the staff of nearby medical units.

Finally, as I have argued above by presenting possible scenarios and having civilian deprivation of protection and defense at its center, actions taken to manage CBRN consequences primarily involves coordinated efforts to re-establish core services, the protection of public health and safety and provide emergency relief for affected populations. In this context, conventional armed forces must be able to effectively support civilian authorities in the event of a CBRN incident.

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MILITARY MOBILITY – AN OPERATIONAL TARGET AS EFFECT OF THE HYBRID WAR BREAKDOWN OF THE BORDERS

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Abstract: *The freedom of movement of forces and means became an operational target, as a result of the ever-widening hybrid warfare on the elimination of frontiers. In recent years, it has come to light that it is very difficult to transport military equipment and forces on national territory, but also on the European continent, as there are a multitude of restrictions. Therefore, ensuring effective military mobility raises wide-ranging debates at both national and EU / NATO levels, as it requires a systematic approach to several economic, military and political issues. The article presents a review of these concerns, which have the ultimate goal of ensuring that the freedom of movement of forces and means can be viewed as an investment process that involves, both military and economic, short-term costs and long-term benefits.*

Keywords: *freedom of movement, military mobility, operational target, hybrid war, hybrid warfare.*

Introduction

The annexation by the Russian Federation of the Crimean Peninsula, i.e. the launching in Western Ukraine of actions not specific to the modern military actions, using the obvious and effective support of the pro-separatists brought to the military specialists the techniques and procedures of the asymmetric military actions and more recently, of the hybrid type.

Through the ways and means of preparing these types of military actions, characterized by the participation of forces structures, military and fighting equipment, without meaning, without concrete possibilities of identification, informative, diplomatic or economic preparation, without concrete objectives, the Russian Federation demonstrated major capabilities to trigger and achieve strategic surprise, and highlighted that the way in which the North Atlantic Alliance was being prepared and trained, like the armies of the Member States, had become obsolete, which was a serious alarm signal for the entire organization.

If the classic military conflict was clear, the hostilities were officially declared, and the regular troops carrying out mostly conventional actions, in the case of the hybrid war, silent annexations of foreign territories, infiltrations of unidentified soldiers of the national armies, subversive actions and non-military military pressures, many of which do not fall under any law, given their novelty character. All these, sums up, give the aggressor an advantage over the target entity, a benefit that is difficult to offset or counter. Therefore, the hybrid conflict brings the target entity into the extremely difficult situation of strategic surprise, without

knowing exactly who the aggressor is, how it fights and how many plans he has, at the same time, he is in the situation of not knowing which the optimal ways to counter aggression are¹.

The latest military events that took place globally, namely those in Ukraine and Syria, the concentration of the Russian military capabilities on the Crimean Peninsula and on the Western border of this state imposed a paradigm shift at the level the North Atlantic Alliance, which has led to discussion and, at the forefront, NATO's ability to respond effectively and effectively to the challenges of the powerful state in the eastern flank of the organization.

Thus, based on the pressures of the NATO's Eastern flank states, especially Poland, Romania and the Baltic States, but also the experience accumulated in the last multinational exercises carried out in these countries, at the Alliance level there was a major lack of mobility of the states' forces especially on the West-East and vice-versa, and sometimes on the North-South axis. The causes of this lack of mobility are multiple and not only related to concrete issues deriving from the weaknesses found at Member State level, but also by some unclear projections at the organization level.

At the same time, at regional level, we are seeing the destabilization of the security situation in the Wider Black Sea Region, in the context of actions by the Russian Federation to strengthen areas of influence, the phenomenon of migration and instability in the Western Balkans. Inter-ethnic tensions and economic imbalances in states in the Western Balkans or in Eastern Romania may lead to the reactivation of local conflicts of low intensity, which can turn into risks to the security of our country².

Vladimir Putin imprinted on the Russian offensive unknown valences, which neither the Tsarist empire nor the Red Army showed when acting according to the strategic lines of "The Testament of Peter the Great"; the Kremlin leader urged military leaders to act sophisticated tactics, alternating the elements of force of the classic war with the asymmetric war³. Vladimir Putin's rise has transformed the ambitions of the Russian Federation into a set of asymmetric threats⁴ targeting any capital that has been chosen by the Russian military strategists - and Romania is one of this due to Deveselu base.

The existence of the space, take into account like a distance, is of no relevance in the case of hybrid warfare. Its components can be deployed and run thousands of kilometers away from the aggressor's territory, without leaving any traces. It's about the cyber, informational or law fare attacks⁵.

1. The freedom of movement of forces and means - known data

We enhance that military mobility is longer linked to the ability to deploy in the theater of operations and the ability to support them. Thus, mobility of troops becomes a multiplier of combat. A very mobile unit can use its increased mobility to engage multiple targets.

¹ Ileana Chiriță, *Război clasic Vs. Război hibrid– O abordare comparativă*, INFOSFERA magazine, Year VII no. 3/2015.

² *** *Strategia militară a României*, București, 2016, Cap.II (In English: Romanian Military Strategy, Bucharest, 2016, Chapter II).

³ Evgheni Mahda, „Specificul unui război hibrid este că lupta se dă nu pentru teritorii, ci pentru mințile și atitudinile cetățenilor altor state”, *Radio Europa Liberă*, May 17, 2016, available online at: <https://www.europalibera.org/a/27738877.html>, accessed on October 20, 2018.

⁴ Petre Duțu, *Amenințări asimetrice sau amenințări hibride: delimitări conceptuale pentru fundamentarea securității și apărării naționale*, Editura Universității Naționale de Apărare „Carol I”, București, 2013, available online at: https://cssas.unap.ro/ro/pdf_studii/amenintari_asimetrice_sau_amenintari_hibride.pdf, accessed on October 20, 2018.

⁵ Iulian Chifu, *Războiul Hibrid și frontierele. Ucraina ca și caz școală pentru viitorul conflictelor*, June 14, 2016, available online at: https://adevarul.ro/international/europa/razboiul-hibrid-frontierele-ucraina-caz-scoala-viitorul-conflictelor-1_575e8ef45ab6550cb8e6dcca/index.html, accessed on October 20, 2018.

Today's reality supports and amplifies the aforementioned assertions, as well as, the effect of the imprint of conflicts characterized and influenced by technological globalization and concerns about identifying the ability to react against hybrid threat⁶. In the history of modern wars, mobility is extremely important and a static defensive position becomes extremely dangerous. In principle, you do not have to allow the enemy to "fix" you, to be static and at his fingertips. The defense must be as mobile and surprising as possible for the inattentive or too confident enemy.

The current security situation marks active hybrid indicators that generate the need for immediate action. From this perspective alliances, especially NATO, have taken measures aimed at pre-positioning the forces. These pre-placed forces can only fulfill their missions if they have an efficient and timely maneuver. Regardless of the organizational plan changes: creation of the Enhanced NATO Response Force, the Very High Joint Task Force/VJTF, the Spearhead battalions or the Joint Logistic Support Group, the existing deficiencies in the Member States' infrastructure plan, road and rail transport capabilities, especially legislation allowing easy transit of NATO countries' borders or for securing the goods and services of their armed forces on the territory of other NATO members exists and are constantly manifested, thus preventing the freedom of movement and the Alliance's reaction capacity.

Faced with an extremely important challenge, the North Atlantic Alliance had to react very quickly and thus, to take the most complex measures since the end of the Cold War. These actions focused on three strategic coordinates: at the organizational level, at the level of the Member States, and in terms of cooperation with the European Union.

At the organizational level, NATO's defense ministers meeting in Brussels on 7–8 June approved a new Joint Support and Enabling Command (JSEC) in Ulm, southern Germany. "When it is activated, the command will be responsible for the movement of troops and materiel within Europe and the co-ordination of its protection"⁷.

Another direction for action at NATO level was the allocation of funds for the development of military infrastructure supporting the Reception, Staging and Onward Movement/RSOM. Thus, in various NATO member states (including Romania), funds have been allocated through the NATO Security Investment Programme (NSIP), to provide the necessary infrastructure at the air, naval or land embarkation/ disembarkation points for the capabilities necessary to support this extremely complicated process.

NATO's command and control structure has been revised, and so, following the Alliance's 2000 headquarters reduction process, new headquarters have been set up in the Member States, especially in the eastern flank (Poland, the Baltic States, Romania and Bulgaria). Multinational Commands such as NATO Forces Integrated Units/NFIU, Brigade, Division, and more recently, the Multinational Army Corps were established in the aforementioned states in order to accelerate the movement of troops on the two axes of the Alliance: West-East and North-South.

Another organizational action plan targeted the Host Nation Support (HNS) through which NATO authorities have urged Member States to develop clear and coherent legislative provisions to improve the mobility of troops along their own borders, respectively to ensure an effective and efficient logistic support in the event of their transit or presence on the territory of another State. Last, but not least, NATO is taking steps with the competent

⁶ Dorin Ioniță, Ion Anghel, "Defence research and development. Description and specific economic aspects", in *Proceedings of the 14-th International Scientific Conference "Strategies XXI"*, "Carol I" National Defense University Publishing House, Bucharest, 26-27 April, 2018, p. 191.

⁷ Nicholas Fiorenza, "NATO Approves Joint Support and Enabling Command in Germany", *IHS Jane's 360*, June 12, 2018, available online at: https://www.realcleardefense.com/2018/06/12/nato_approves_joint_support_and_enabling_command_in_germany_302556.html, accessed on August 20, 2018.

national military authorities for intensified cooperation in the field of prepositioning of equipment and goods in the facilities provided by the various Host Countries.

Through the HNS, the Alliance insists that improvements be made to actions for the mobility of its troops, as follows:

- Operationalization of all RSOM facilities;
- Extension and modernization of the motor vehicle fleet for heavy and oversized vehicles;
- Identification of ways and means of legislative solutions for contracting goods and services for the benefit of foreign armed forces (belonging to the Member States) that would imply an appropriate budgetary planning process, at institutional level;
- The extension of the railway wagon fleet for transport and security, respectively the conclusion of contracts which allow, in limited circumstances, access to them in a very short time;
- Identifying ways and means to reduce administrative costs with the transfer of troops and military equipment;
- Identifying a complete need for works to enable civilian transport infrastructure to be adapted to military needs.

Another measure taken at the Alliance level was to set up the Allied initiative to increase the operational capacity of its Forces, called the “Initiative of the Thirty”. This initiative foresees that by 2020, NATO will have 30 (thirty) mechanized battalions, 30 (thirty) squadrons of aviation and 30 (thirty) warships all ready to be deployed in less than 30 (thirty) days to respond to potential hybrid threats to the security of NATO member states⁸.

In the framework of NATO-EU cooperation, on the occasion of the meeting of the defense ministers of the Member States, Ursula Vander Leyen, the German defense minister proposed the creation of “something like a military Schengen within Europe”⁹, allowing the circulation of military vehicles belonging to Member States in all other Alliance countries. At the same time, the directions of action for intensified cooperation between NATO and the EU have been established, ensuring, under a new security paradigm to improve the Alliance's ability to respond to hybrid threats, to create a common framework for the mobility of troops.

As regards the EU's efforts to ensure the mobility of Member States' forces, the organization insists on a constructive and intensified partnership with NATO, on the creation of a common space to ensure an increased level of mobility for the forces of the two organizations. In this sense, the achievement of mobility can only be ensured through a joint effort between the two organizations, the Member States and, inevitably, the partners in Europe.

The areas where EU Member States are called upon to work are to improve the legislation in this field, namely the improvement of road, rail, port and air infrastructure, which in many cases is obsolete and does not fulfil the requirements for military mobility.

All these efforts have led to the development of the Permanent Structured Cooperation (PESCO), designed to make the European defence more efficient and to deliver more output by providing enhanced coordination and collaboration in the areas of investment, capability development and operational readiness. The EU's desire to respond as efficiently as possible to hybrid threats has led to the initiation of 17 (seventeen) projects within the framework of

⁸ Valentin Bolocan, “Cum își deplasează NATO rapid militarii în caz de criză pentru a veni în sprijinul aliaților aflați în pericol”, *Adevărul*, August 4, 2018, available online at: https://adevarul.ro/news/eveniment/video-isi-deplaseaza-nato-rapid-militari-caz-criza-veni-sprijinul-aliatilor-aflati-pericol-1_5b653b5bdf52022f75fe253e/index.html, accessed on August 21, 2018.

⁹ “NATO to set up Schengen system for military, German minister says”, *Daily Sabah Europe*, February 15, 2018, available online at: <https://www.dailysabah.com/europe/2018/02/15/nato-to-set-up-schengen-system-for-military-german-minister-says>, accessed on August 17, 2018

PESCO, one of which focuses on “military mobility”. Twenty-five EU Member States have decided to include the military mobility among the more binding commitments they have taken under the Permanent Structured Cooperation, launched on 11 December 2017¹⁰.

European Commissioner for Transport Violeta Bulc said that the plan would prevent “physical and administrative obstacles” which often hamper military exercises. Often, troops and assets moving through EU member states can be blocked at borders, and making transport more interoperable across these borders would significantly improve military mobility. The first stage towards implementing the plan involves consulting on the specific requirements it will need to fulfil, Bulc explained. “We first need the detailed description of the military requirements, across all relevant modes of transport, both in geographical terms... and in terms of technical performance”¹¹.

In the sense of the presented ones, we would also like to highlight the efforts of the European Commission (EC) in this field. Thus, the EC intends to take concrete steps to improve the mobility of Member States’ forces, as follows¹²:

- improving cross-border transport routes;
- reaching the capacity of road bridges;
- reaching the height of the tunnels to deal with heavy and oversized techniques;
- improving the transport capacity (increasing the number of railway seals);
- rebuilding the viability of Member States' ways of communication, etc.

The European Commission's proposed European road network comprises 9 transport corridors, of which: 2 (two) are North-South, 3 (three) East-West and 4 (four) diagonal.

Both the EC and especially, the Member States, are in the process of identifying all the problems that arise from the necessity of realizing these ways of communication and establishing the ways and means of their rehabilitation in order to ensure the necessary mobility required by the NATO and the EU military actions to respond effectively to all the hybrid challenges generated at the Eastern border of the two organizations.

We believe that it is necessary to highlight the US actions in this area, in fact the most powerful partner of NATO, and the initiator of many actions to increase the mobility of Alliance troops, especially on the West-East axis. Thus, the efforts of the American partner are materialized through European Deterrence Initiative (EDI). Through EDI, the US Army aims to increase the level of mobility of both its own forces and NATO. The US support in this respect is extremely visible, even if we take into account the financial and material efforts. In 2017 financial year (FY), the Obama Administration proposed and received a substantial increase in EDI funding, which jumped to \$3.4 billion for the year. In FY 2018, EDI under the Trump Administration once again saw a significant increase rising to nearly \$4.8 billion¹³.

The underlying EDI actions are: increase presence through the use of rotational forces; increase the depth and breadth of exercises and training with NATO allies and theater

¹⁰ Council of the European Union, *Council Decision establishing Permanent Structured Cooperation (PESCO) and determining the list of Participating Member States*, Brussels, 8 December 2017, available online at: <http://www.consilium.europa.eu/media/32000/st14866en17.pdf>, accessed on October 23, 2018.

¹¹ “Bulc presents EU Action Plan on Military Mobility to NATO”, Government Europa, June 11, 2018, available online at: <https://www.governmenteuropa.eu/bulc-eu-action-plan-on-military-mobility/88330/>, accessed on August 17, 2018.

¹² Catherine Martens, “UE trebuie să devină rapid și o adevărată uniune militară, pentru a face față Rusiei”, *Ziare.com*, March 29, 2018, available online at: <http://www.ziare.com/international/nato/ue-trebuie-sa-devina-rapid-si-o-adevarata-uniune-militara-pentru-a-face-fata-rusiei-1507855>, accessed on October 23, 2018.

¹³ Frederico Bartels, Daniel Kochis, *Congress Should Transform the European Deterrence Initiative into an Enduring Commitment*, The Heritage Foundation, May 29, 2018, available online at: <https://www.heritage.org/europe/report/congress-should-transform-the-european-deterrence-initiative-enduring-commitment>, accessed on October 23, 2018.

partners; preposition supplies and equipment to facilitate rapid reinforcement of U.S. and allied forces; improve infrastructure at key locations to improve our ability to support steady state and contingency operations; and build the capacity of allies and partners to contribute to their own deterrence and defense¹⁴.

Certainly, each of these actions, initiatives or even efforts at NATO and EU level can be further detailed or explained much better. What we think is extremely important is that many of them have been based on Member States' requests, especially those in the Eastern flank of the two organizations, which are subject to hybrid threats from the Russian Federation.

2. Ensuring the freedom of movement - an investment process

The need for effective maneuver of forces and means translated today by the expression of *freedom of movement* has become an objective especially of alliances/partnerships with mobility valences and mutual support commitments. The issue has to be analyzed on the regional level, starting from areas of interest and customized in the Joint Operations Area (JOA)

Contingency plans have created, over the last period, mixed commitments with variables and solutions dedicated to each country's capabilities. Concerns have been shaped by two or more plans, one being the construction and projection of capabilities, and the second aimed at ensuring the freedom of movement of these capabilities in the space determined as JOA and beyond.

The freedom of movement is based on a proper dual-use infrastructure, used for both civilian and military needs. For example, railways have been the foundation of Romanian strategic mobility and the orientation has been towards defence. Railroads are the key, even with their huge capital costs, because they represent the physical backbone for the development of a modern national economy that aspires to the integration into the regional trade. Strategic railroads might facilitate Romanian entry into war, but if modern war became protracted, the same railroads must effectively link fighting front with supporting rear.

Today, Romania's strategic mobility lost the ties to its railways, and the air transport cannot deploy and sustain large-scale armed forces; this is an axiomatic point guiding the parameters of Romanian strategic mobility.

In order to overcome the hurdles of the deteriorated rail infrastructure, we identified some investment measures that Romanian political leadership has to implement on a large scale, in order to:

- increase the reconstruction rates on damaged sections of track;
- enhance the mobility of the recovery railroad equipment, providing it with multimodal capabilities;
- construct bridge conduits not only for rail traffic, but also for motor and tracked vehicles;
- automate survey works and the development of design and cost estimate paperwork and operations management plans for railway reconstruction.

All these measures must be correlated with an inventory of works including communication routes, artworks (tunnels, viaducts, bridges, etc.), transport terminals, as well as border points with neighboring states, considering the weight and the overweight of many of the military equipment (tanks, armored conveyors, infantry fighting machines, etc.), as well as civilian ones. Thus, improving the efficiency and effectiveness of military mobility became an investment process with short-term costs and long-term benefits.

¹⁴ *Ibidem.*

Conclusions

The high speed evolution of the security situation, of the globalization of hybrid-type actions, is consistently outpacing the economic capacity to adapt military technology or betrays abandonment in favor of non-military capabilities. Therefore, Romania's ability to dispose or plan the development of military capabilities to respond to crises within the country and also to project its power in a limited manner beyond the borders is a major desideratum.

Enhancing strategic mobility is further complicated by the changes to the specific national, NATO and EU policies, and arguably the emergence of an appetite to correct measures implemented previously. Meanwhile, as in the case with Romania's conventional combat units, combat service support and efforts to improve strategic mobility face a protracted transition period. Strategic mobility will consequently depend upon resolving the issues around the final form of the weapons systems, the progress of military modernization and – until some weaknesses highlighted in this article are redressed – this capacity to deploy and sustain forces in theatres of military operations will remain low.

In conclusion, we believe that ensuring an adequate level of mobility for NATO and EU Armed Forces to enable these organizations to effectively and efficiently respond to hybrid actions requires an integrated approach of the two organizations, increased cooperation and allocation of substantial funds. All this in the short and medium term in a planned and focused manner on achieving all the set objectives.

Last but not least, NATO and EU member states must make consistent efforts to implement the strategies and plans of the two organizations in this area. This will thus enhance the NATO and EU's capacity as an international security partners, also contributing to protection of Member States and maximize the effectiveness of defence spending.

Adapting the legislation of the Member States to the needs of the mobility of military forces is another component of this desideratum. In this regard, both the German Defense Minister's and the EU High Representative's initiatives to create a military "Schengen space" is becoming an accessible way to achieve the desired mobility.

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THE ROLE OF SOCIAL NETWORKS IN RUSSIAN FEDERATION'S PUBLIC DIPLOMACY

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***Abstract:** The social networks generated an environment which empowers both citizens and politicians and puts diplomats under public scrutiny in a way that the mainstream media was unable to do previously. Social media is being used in ways that shape politics, business, world culture, international relations, education, careers, innovation, and more. One of the ways that social media has transformed politics is the sheer speed at which news, poll results and rumors are shared. Political campaigns are now influenced by every story, whether true or not, that gets spread around social media. It's getting more and more difficult to separate actual news from fake news online. Social media makes this distinction especially confusing. The constant stream of links and rumors about political leaders and candidates is a mixture of truth, lies, satire and speculation. As part of this worldwide campaign, states disseminate their influence according to their objectives. For instance, Russian social media posts have a visible influence in Baltics, Ukraine, and other nearby states through a variety of means, including traditional and social media. The purpose of this paper is to get a better understanding of the nature and effectiveness of pro-Russia outreach on social media and identify counter-messaging opportunities. There are other more nuanced questions about the role of social media and online communities in International Relations whose effects are not so easily apparent. International Relations as a discipline has only recently begun to engage with the growth of social media and its implications for global politics. But if the current climate is anything to go by, social media is well on the way to disrupt the traditional channels and methods of diplomacy.*

***Keywords:** Social Influence, Social Strategy, Russia, Social Media, Public Diplomacy, International Relations.*

Introduction

Russia is engaged in an aggressive propaganda campaign aimed at multiple different national audiences to include its near-abroad neighbors on its western border. And of course, social media are by no means the sole platform of this campaign. Russia appears to actively synchronize social media products with those of various other information outlets, including Russian-branded TV broadcasts and web news, proxy civil society agencies, and web outlets. However, the Kremlin's web campaign that relies on anonymous web comments and non-attributed social media content disseminated by bots and trolls offers Russia the opportunity to target unsuspecting audiences with malign and often fake-news content. Ukraine has seen the worst of this campaign, but, as watchers of the 2016 U.S. election know, the target set can swiftly change. It will be critical for U.S., EU, and NATO policymakers to confront this information campaign.

Key in this regard will be developing policies and operations that address the multifaceted components of Russia influence: More than just social media is at play. Investing

resources in identifying, monitoring, and, if necessary, targeting the Russia-based non-attributed social media accounts will also be critical.

1. Aims of Russian Propaganda

The Russian government's sphere of influence is global; it conducts these multifaceted propaganda campaigns in Russian, English, Arabic, French, Czech, Georgian, and a host of other languages. Pomerantsev and Weiss suggest that Moscow's influence can be thought of concentrically: in Ukraine it can create complete havoc; in the Baltic states it can destabilize; in Eastern Europe, co-opt power; in Western Europe, divide and rule; in the US, distract; in the Middle East and South America, fan flames¹.

However, Moscow's reach is most direct in the neighboring states and former Soviet republics that house sizable ethnic Russian and Russian-speaking populations, also called compatriots. The commonality of Russian language provides a springboard for common communication, as well as a potential issue wedge to leverage compatriots against their host countries and governments².

Russian-language Kremlin propaganda in these bordering countries draws on aspects of those countries' shared legacy as post-Soviet states. Themes include a common feeling that the West in the late 1990s betrayed them by failing to deliver on promises of prosperity; the supremacy complex of having lost superpower status; the idea that Eurasian civilization is founded on traditional conservative values, such as family and orthodoxy; and, finally, a shared fear of violent revolutions, in which protests are portrayed as slippery slopes to bloody civil wars³.

Drawing on these shared aspects, the Kremlin can leverage Russian-identifying populations to amplify the Kremlin's message, pressure those populations' host governments, and incite unrest in their host regions or countries. Furthermore, the mere existence of these compatriot populations can be used to legitimize Russia's status as a global leader whose protection is not only needed but welcomed outside of its borders⁴.

The authors Weisburd, Watts, and Berger divided Russia's aims with propaganda in the "far abroad" into four categories: political, financial, social, and conspiracy. First, they argued that Russian political content aims "to tarnish democratic leaders or undermine institutions" through "allegations of voter fraud, election rigging, and political corruption". Second, the Kremlin's financial messages erode "citizen and investor confidence in foreign markets," positing "the failure of capitalist economies" by "[s]toking fears over the national debt, attacking institutions such as the Federal Reserve", and attempting to "discredit Western financial experts and business leaders". Third, Russia targets social tensions by emphasizing and leveraging "police brutality, racial tensions, protests, anti-government standoffs, and alleged government misconduct" in order to "undermine the fabric of society". Finally, conspiracy theories stoke fears of "global calamity while questioning the expertise of anyone who might calm those fears", such as by promoting fears of the U.S. government instituting

¹ Peter Pomerantsev, Michael Weiss, *The Menace of Unreality: How the Kremlin Weaponizes Information, Culture and Money*, available online at: https://imrussia.org/media/pdf/Research/Michael_Weiss_and_Peter_Pomerantsev_The_Menace_of_Unreality.pdf, accessed on November 5, 2018.

² Todd C. Helmus, Elizabeth Bodine-Baron, *Russian Influence on Social Media. Understanding Russian Propaganda on Social Media in Eastern Europe*, RAND Corporation, Santa Monica, 2018, p. 12.

³ Andrei Soldatov, Irina Bologan, *Inside the Red Web: Russia's back door onto the internet – extract*, available online at: <https://www.theguardian.com/world/2015/sep/08/red-web-book-russia-internet>, accessed on October 21, 2018.

⁴ Vera Zakem, Paul Saunders, Daniel Antoun, *Mobilizing Compatriots: Russia's Strategy, Tactics, and Influence in the Former Soviet Union*, 2014, p. 6.

martial law or nuclear war between Russia and the United States⁵. The common theme is the goal of creating confusion and undermining trust in Western democratic institutions.

2. Kremlin's network of disseminating information

The Kremlin has built a complex production and dissemination apparatus that integrates actors at varying levels of attribution to enable large-scale and complex information operations. Actors at the first and second levels of attribution produce or circulate exploitable content. The first level involves overtly attributed or "white" outlets, including official Russian government agencies, such as the Ministry of Foreign Affairs (MFA) and a constellation of Russian state-controlled, state-affiliated, and state-censored media and think tanks, such as RT, Sputnik News, the All-Russia State Television and Radio Broadcasting Company (VGTRK), Channel One, and the Russian Institute for Strategic Studies. The second level of content producers and circulators is composed of outlets with uncertain attribution, also called "gray".

These activities are conducted by a network of trolls, bots, honeypots, and hackers. Trolls, bots, and honeypots all refer to fake social media accounts used for various purposes, but trolls and honeypot accounts are operated by humans, while bot accounts are automated. While both trolls and bots are typically used to push particular narratives, honeypots instead tend to be used to solicit information and compromise accounts via malicious links or sexual exchanges. Meanwhile, hackers deface websites, execute denial of service attacks, and extract secrets to feed content production⁶.

In the first step, false or misleading content is created by Russian-affiliated media outlets, such as RT, Sputnik News, and Russia Insider; Russia-friendly media outlets, such as True Pundit; user-generated media sites, such as YouTube; and "leaks" from hackers, such as Fancy Bear (also known as APT28) or Guccifer 2.0.4 Second, force multipliers, such as trolls and bots, disseminate and amplify this content, adding fear-mongering commentary. Third, mutually reinforcing digital entities pick up and perpetuate the narrative, whether they are ideologically friendly or simply fall under the category of "useful idiots". These entities include news aggregators, far-right or far-left sites, blogs, and users drawn in by clickbait headlines that reinforce their previously held beliefs, in addition to media outlets that frequently echo the Kremlin line but are not obviously affiliated with Russia, such as Zero Hedge⁷ and Figure 1 shows the insular and circular nature of Zero Hedge's referrer network.

⁵ John M Berger, *Here's What Russia's Propaganda Network Wants You to Read*, available online at: <https://www.politico.com/magazine/story/2017/08/23/russia-propaganda-network-kremlin-bots-215520>, accessed on October 02, 2018.

⁶ *Ibidem*.

⁷ Todd C. Helms, Elizabeth Bodine-Baron, *Russian Influence on Social Media. Understanding Russian Propaganda on Social Media in Eastern Europe*, RAND Corporation, Santa Monica, 2018, p. 13.

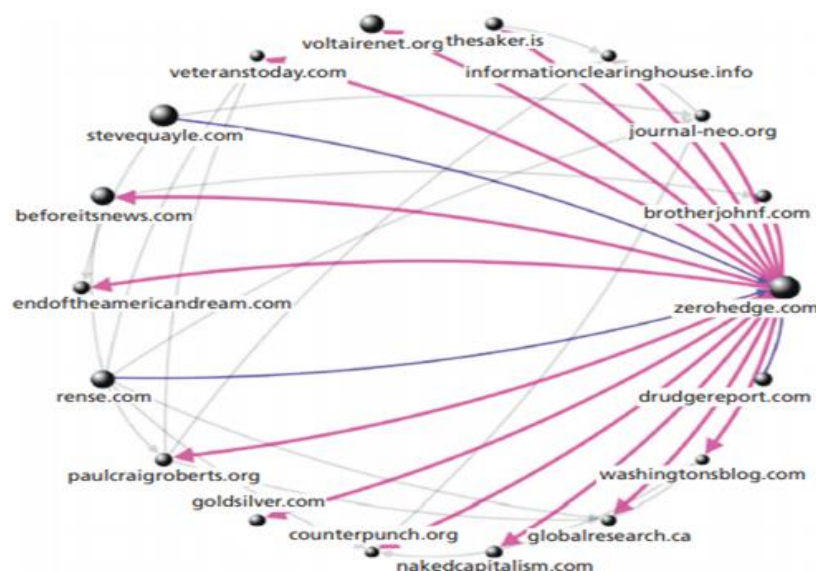


Figure no 1: Zero Hedge Referrer Network⁸

3. Russian influence strategy on near abroad

In the late 2000s, Russia began to explore its online propaganda capacities in the near abroad with a series of cyberattacks on Estonian banks, government entities, and media outlets, supposedly conducted by Kremlin youth group “patriotic hackers”⁹. With the invasion of Georgia in 2008, Russia disseminated multiple narratives online, providing alternative explanations for its actions. However, observers point to the 2011 accusations that Russian President Vladimir Putin’s party rigged Russian elections as the true precursor for the current incarnation of Putin’s information warfare. Putin reportedly blamed the West for instigating the protests within Russia. In 2013, Putin declared during a visit to RT that he wanted to “break the Anglo-Saxon monopoly on the global information streams”¹⁰. The annexation of Crimea in 2014 kicked off the debut of online Russian propaganda on the world stage, which was followed by a dizzying swirl of disinformation about Russia’s actions and intentions in Crimea and Ukraine.

This misleading content was amplified in Russia’s near abroad, even outside of Ukraine, using the force multipliers discussed, such as trolls.

Russia’s information campaigns appear simultaneously cutting edge and old school, potentially extending forward to the clever use of malware and backward in time to the publishing of books.

Given the potential that Russian propaganda on social media has to affect events around the world, it is vitally important to understand its extent and impact. Language is a

⁸ *Apud.* Todd C. Helmus, Elizabeth Bodine-Baron, *Russian Influence on Social Media. Understanding Russian Propaganda on Social Media in Eastern Europe*, RAND Corporation, Santa Monica, 2018, p. 13.

⁹ Peter Pomerantsev, Michael Weiss, *The Menace of Unreality: How the Kremlin Weaponizes Information, Culture and Money*, available online at: https://imrussia.org/media/pdf/Research/Michael_Weiss_and_Peter_Pomerantsev__The_Menace_of_Unreality.pdf, accessed on November 05, 2018.

¹⁰ Max Fisher, *In case you weren’t clear on Russia Today’s relationship to Moscow, Putin clears it up*, Washington Post, June 13, 2013, available online at: https://www.washingtonpost.com/news/worldviews/wp/2013/06/13/in-case-you-werent-clear-on-russia-todays-relationship-to-moscow-putin-clears-it-up/?noredirect=on&utm_term=.1c1c13f1cdbf, accessed on November 05, 2018.

versatile tool kit for expressing ideas. Its versatility is demonstrated not only in the ideological complexity it can convey but also in the variety of ways that the same idea can be formulated as language. Because language is so versatile, there is ample room for individual people and groups of people to use it in distinctive ways. Consequently, there are many variations within any language, and they correspond to meaningful distinctions in social organization - geographic variation, subcultures, formal organizations, and advocacy groups (publics), among others. These differences perpetuate themselves through intention, habit, and unconscious reaction. Resonance analysis exploits the close connection between social structure and language. It identifies how language use within a particular group of interest is distinct from language use in a general baseline population, and then searches for that distinctive language signature within a target population¹¹.

Impact of the Soviet period varied across countries but led to significant demographic, linguistic, and cultural changes that would have long-standing political implications, including long-standing vulnerability to Russian influence more than two decades later. Beyond Soviet-era migrants and their descendants, many other people in the former Soviet republics speak and understand Russian and so might be swayed or compelled by Russian-language propaganda.

In Estonia and Latvia, the Soviet Union engaged in a deliberate strategy of settling populations from elsewhere in the Soviet Union primarily, but not exclusively, from Russia. The result was that, when Estonia and Latvia regained independence at the end of the Cold War, these two countries had substantial minorities of people whose families were not from Estonia or Latvia and who primarily used Russian as their native language¹².

The socioeconomic status, political opinions, and loyalty of the Russian speakers in the Baltic states vary extensively. In both Estonia and Latvia, the Russian-speaking population is concentrated in capital cities and in regions close to the Russian border. Urban Russian speakers tend to be relatively well off, while the rural populations are, on average, in lower income brackets, although incomes in these regions still favorably compare with those in the neighboring regions in Russia¹³. In both countries, there is a spectrum of levels of loyalty and integration into the majority society. Although many Russian speakers have become well integrated, there are still political divides between the Russian-speaking and majority populations. In both Estonia and Latvia, nationalist movements remain strong, and, in both countries, there have been shifting political coalitions made up of center-right parties dominated by the majority population who are skeptical of granting additional recognition to Russian speakers. Both countries also have large political parties supported mainly by Russian speakers - Centre Party in Estonia and Harmony Centre in Latvia¹⁴.

Not unlike the Baltics, Ukraine has had a highly complex and disputed national identity - many people in the country traced their roots to Russia, the country was perhaps more closely integrated into the Soviet Union than the Baltics, and many Ukrainians were bilingual or even used Russian as their primary language. Ukraine's ethnic composition was shaped by many factors, including human-caused demographic catastrophes, migration, and economic conditions. As noted, the Russian language remains popular in Ukraine. According to the 2001 census, 29.6% defined Russian as their native language, while 67.5% indicated Ukrainian¹⁵.

¹¹ Todd C. Helmus, Elizabeth Bodine-Baron, *op. cit.*, p. 48.

¹² Andres Kasekamp, *A History of the Baltic States*, Palgrave Macmillan, New York, 2010, p. 147.

¹³ *Ibidem*.

¹⁴ *Ibidem*.

¹⁵ Sarah Oates, Philip Merrill College of Journalism, University of Maryland, written communication, August 21, 2017.

Regarding all the clues presented above we can conclude that many pro-Russia activists espousing a pro-Kremlin viewpoint hail from Russia and actively spread Russian propaganda on social media. However, state sponsorship of these accounts remains unclear and needs further analysis. However, one can envision Russia supporting these accounts either by creating non-attributed social media accounts that can serve as part of its bot and troll campaign or by supporting like-minded activists situated throughout the region adjacent to Russia.

Conclusion

Existing Western and Russian definitions of regional security in Eurasia are incompatible and will remain a source of tension. Russia's determination to be an acknowledged great power requires a level of influence in its immediate neighborhood that other states have been unwilling to accept. Until the West and Russia find a mutually acceptable European security architecture, policy-makers should expect new conflicts to erupt.

Russia's leadership is prepared to take significant, perhaps even unexpected or seemingly irrational, risks to defend vital interests. Because Russia's definition of security for its citizens and compatriots in its immediate neighborhood requires stability, Moscow may be open to mutually satisfactory understandings to maintain stability.

Track Russian Media and develop analytic methods to effectively counter Russian propaganda, it will be critical to track Russian influence efforts. The information requirements are varied and include the following:

- Identify fake-news stories and their sources.
- Understand narrative themes and content that pervade various Russian media sources.
- Understand the broader Russian strategy that underlies tactical propaganda messaging.

It will also be important to identify and track the identities and influence of unattributed Russian social media accounts that take the form of bots or trolls. These accounts represent a potentially pernicious form of influence and one that has been targeted against audiences in Eastern Europe and Ukraine but also in the United States.

Ultimately, it will be key for different members of relevant U.S. agencies, as well as NATO, EU, and key nations in Eastern Europe, to ensure that they have effective mechanisms in place to identify and understand the nature of Russian propaganda. This might include working with relevant technology firms to ensure that contracted analytic support is available.

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PERSPECTIVES ON THE ACCESSIBILITY OF PUBLIC INFORMATION

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Abstract: *The digital society has experienced exponential growth over the last decade and new communication technologies have enlarged the access of social entities to various types of information. These pieces of information have become an essential resource to which civil society members relate in different ways, within the same legislative framework. However, the perceptions of their value and utility are most diverse and often related to the interests of each individual or organization in a highly competitive social environment. In this context, activities aimed at obtaining information, regardless of the accessibility level, have become increasingly prominent.*

Keywords: *public information, secretive information, national security.*

Introduction

In the present society, the issue of information control has become extremely important, and the modeling of meanings is a strategic resource with multiple purposes. The stakeholders in the area of large-scale information communication sometimes operate on beliefs and behaviors not only at the level of individuals or at market segments, but even on the scale of social macro-structures, creating the possibility of emerging vulnerabilities to national security.

Maintaining the balance between the right and the need to have access to public information, and the obligation to classify certain types of information in order not to harm national security is an increasingly complex activity for all the social vectors involved in the processes of obtaining and disseminating information.

At present, information has become an essential resource in social functionality, but members of civil society relate to it in various ways, most often depending on momentary interests or on the level of knowledge in the domain from which information originates, so that the perceptions in relation to the value and usefulness of the information differs.

1. Information of public interest and national security – two antinomic concepts?

The current society is predominantly informational, with an exponential development over the past decade, and new communication technologies have facilitated public access to various types of information that are produced and consumed at an extremely alert pace.

In a highly competitive environment and in view of this new context, activities aimed at obtaining information, regardless of the level of accessibility, are becoming more and more obvious. It is certain that access to information of public interest can not be restricted, this

being a right enshrined in the Romanian Constitution¹, but also established by Law no. 544 of 2001 on free access to information of public interest².

Public authorities are required to ensure that citizens are properly informed about public affairs and issues of personal interest (Article 31, paragraph 2 of the Constitution), but the Constitution makes a very clear specification that this right of citizens must not in any way affect safety and protection of young people and, above all, national security. Aware of the power the media exert on its own field of activity, the legislature stated in paragraph 4 of the same article that “*public and private media are obliged to ensure that public opinion is properly informed*”³.

In this respect, mass communication of public information is conducted by regulating the autonomy of public radio and television services as strategic entities of national interest. Law no. 41/1994 on the organization and functioning of the Romanian Broadcasting Society and the Romanian Television Society specifies in addition that the two societies have the obligation to ensure pluralism through their entire activity, free expression of ideas and opinions and correct public information⁴, one of the general objectives being precisely to inform the public, besides education, culture and entertainment.

Moreover, the legislator admits the role of the public radio and television services in informing the public, asking them to broadcast with priority and free of charge, the messages of public interest received from the Parliament, the President of Romania, The Supreme Council for the Defense of the Country or the Government⁵.

Freedom to be informed is also enshrined in the *European Convention on Human Rights*⁶ which, in Article 10, also enshrines the freedom of opinion and communication of information without these rights being limited by state borders.

However, the legislation must provide for a number of formalities and conditions, or for possible consequences of this freedom of speech so as not to endanger national security, territorial integrity or public security, the defense of order and the prevention of crime, health, morality, reputation or the rights of others. It is also intended to prevent the disclosure of confidential information or that which guarantees the authority and impartiality of the judicial system. At the same time, Article 19 of the *Universal Declaration of Human Rights* stipulates the right to freedom of speech but also to access and disseminate information, regardless of the means used. This fundamental right, which contributes to the free development of individuals, finds its rightful source in the concept of human dignity, as laid down in the International Covenant on Civil and Political Rights, which Romania ratified in 1974.

As it results from the legislation in the field, this fundamental right requires both the dissemination and the reception of information, but also the need to protect a certain category of information that should not be in the possession of the enemy or of groups that can threaten the security of the state or of the citizens.

Though sometimes the information is of public interest, it cannot be published because it may be detrimental to the public interest. Thus, we are talking about information classified as secret, which is an exception to the principle of free access to information of public

¹ *Constituția României*, 2003 (In English: The Romanian Constitution, 2003).

² *Legea nr. 544 din 2001 privind accesul liber la informațiile de interes public* (in English: Law no. 544 of 2001 on free access to information of public interest).

³ *Constituția României*, 2003, articol 31, paragraf 4 (In English: The Romanian Constitution, 2003, Article 31, paragraph 4).

⁴ *Legea nr. 41 din 1994 privind organizarea și funcționarea Societății Române de Radiodifuziune și a Societății Române de Televiziune* (In English: Law no. 41 of 1994 on the organization and functioning of the Romanian Broadcasting Society and the Romanian Television Society).

⁵ *Idem*.

⁶ *The European Convention on Human Rights*, 1950.

interest, although, in practice, this is also used for the public interest, but by authorized specialists.

A definition of classified information is found in Law 182, 12 April 2002, on the protection of classified information, with direct reference to “information, data, and documents of interest for national security which, due to the levels of *importance and consequences that occur after disclosure or unauthorized dissemination, must be protected*”⁷.

There are two classification levels, respectively state and service related. Disclosure of state secrets jeopardizes national security and the defense of the country, and disclosure of service secrets can cause harm to a legal person governed by public or private law. The law also makes a distinction between classification levels, namely between: top secret, secret and confidential. Another definition of classified information is found in GD no. 353 of 2002 for the approval of the Norms on Classified Information Protection of the North Atlantic Organization in Romania - „*that information or material that requires protection against unauthorized disclosure and is assigned a security classification for that purpose*”⁸.

Any person may request information of public interest from public authorities and institutions, which can be provided in any form, in writing or verbally, as stipulated by Law 544/2001 regulating free access to information of public interest.

But the same law establishes a number of exceptions, as information to which the public has no access and for whose protection the persons and public authorities holding such information will take action. Thus, classified information in the field of national defense, security and public order must be protected; the same is valid for classified information regarding the deliberations of the authorities, the economic and political interests of Romania, as well as information on personal data.

In fact, since 25 May 2018, applies to all EU Member States and European Regulation no. 679, adopted in 2016 by the European Parliament and the European Council, on the protection of personal data. The regulation protects the rights of persons within the EU, but also applies to data-based operators located outside the European area insofar as their goods and services are intended for persons within the territory of the European Union.

Among the exceptions to the rule that the public has unobstructed access to information of public interest is the information disclosure which violates the principle of fair competition in commercial or financial activities, and information about the procedure during criminal or disciplinary investigation or judicial proceedings, if the outcome of the investigation may be influenced in any way or endanger the life, the integrity, the health of a person in the investigation, or the fairness of the process. Last but not least, more attention should be paid to information that could harm young people's protection measures. According to the same law, information that favors or conceals the violation of a law by an authority or public institution can not be classified.

2. Strategic and integrity aspects of Information Security

Information security is widely addressed in the National Information Security Doctrine approved by the Supreme Defense Council in 2004 in accordance with the Constitution of the country, but also with the Euro-Atlantic approach to security, cultural and institutional organization, respecting the Integrated Information Doctrine, counterinformation and NATO security. The doctrine has been developed to maintain internal stability and strengthen the

⁷ *Legea nr. 182 din 12 aprilie 2002 privind protecția informațiilor clasificate* (In English: Law no. 182 of 12 April 2002 on the protection of classified information).

⁸ *HG nr. 353 din 2002 pentru aprobarea Normelor privind protecția informațiilor clasificate ale Organizației Tratatului Atlanticului de Nord în România* (in English: GD no. 353 of 2002 to approve the Norms on the Protection of Classified Information of the North Atlantic Treaty Organization in Romania).

international security environment. "NATO's Integrated Information, Counterintelligence and Security Doctrine provides the conceptual basis for systematic collaboration with Member States' national security services to agree on common information, values and resources that require protection, as well as common defense standards. This doctrine is the theoretical support of national security, carried out within the common political and military measures, reflected by the collection and exploitation of information or government information on the nature of threats and how to protect against them"⁹. Thus, security information gains a special strategic value within the state, as well as within the EU and the Alliance, and the dissemination and access to some information is often restricted in order to protect national security. The Doctrine pursues a number of main objectives. The main goal is raising citizens' awareness towards intelligence, which should be perceived in the spirit of maintaining a necessary level of self-defense of the Romanian society, and of its allies, observing the rule of law and the rights of democratic institutions.

In this respect, the legislative framework and the information, counterinformation and security policies should be strengthened and improved in order to increase the capacity of the institutions with attributions in the field to obtain, process and transmit relevant and valuable information to decision makers of Romanian and the Alliance.

Special attention should be given to the implementation and improvement of integrated security assessment and exploitation mechanisms, to the cooperation procedures among intelligence structures of the national security system, as well as to those of our allies. In order to prevent and counteract specific and common threats, a particular emphasis must be laid on the implementation of common terminology to ensure the compatibility of the national information structures with those of the Allies, employing mechanisms to improve the communication of these structures with other public authorities and institutions, and last but not least, with civil society.

The Doctrine further plays a fundamental role in ensuring the legislative framework and observing the fundamental rights and freedom of the citizen in carrying out activities related to the security and the activity of the security intelligence services¹⁰.

This document, together with the National Defense Strategy, which is the most important document of national defense planning can undergo changes, following public debates in which public authorities, non-governmental organizations, the academia, representatives of the media and civil society participate, debates that would facilitate the better understanding of this doctrine.

However, there must be a balance between the public debate and the contribution of experts in establishing the Security Policy, so as to create a balance between access to information and information classification, bridging between the legitimate security need and the essential need for information. At the same time, it is essential to capitalize on the information that decision-makers need and to protect the channels of providing additional information.

"Achieving the right relationship between maximum security and dissemination of information is a matter of judgment, based on the correct analysis of the situation, the nature of the information, its value and the sources involved in data collection and operative intelligence"¹¹.

⁹ *Doctrina națională a informațiilor pentru securitate*, July 01, 2004, available at: <https://www.sri.ro/articole/doctrina-nationala-a-informatiilor-pentru-securitate>, accessed on July 10, 2018.

¹⁰ *Idem*.

¹¹ *Drepturile și libertățile informației*, April 29, 2018, available online at: <http://intelligence.sri.ro/drepturile-si-libertatile-informatiei/>, accessed on July 15, 2018.

In an article published in NATO Review Magazine, entitled “*The Alliance’s evolving posture: towards a theory of everything*”¹², Dr. Kęstutis Paulauskas highlights the unpredictability of NATO's current policy and the growing concern reflected in the debates of academics and military experts on the Alliance's ability to adapt to lasting paradigm changes. Although the interest in debating these themes is increased, it is clear that the primary preservation of the approach and decision-making policies as well as the actions of NATO is of utmost importance. Thus the Alliance can fulfill its crucial role in defending the 29 allied countries and exert responsibility for the population of about one billion, as it sums them up.

Therefore, if the strategies related to the nature, level, program or targets of the Alliance are not widely known to the public, it does not mean that they do not exist.

It is true that this leaves room for assumptions on which a series of debates and theories in the public space are launched, but there is not enough information for a correct analysis due to restricted data access.

This is understandable given the surprising way in which NATO opponents are acting, and in the case of terrorist attacks, there is in fact no warning.

Speaking about the role of public debate, Professor T. Frunzeti draws attention to the way in which it can be altered: “*The public debate can ensure adherence to national security policy, but if it is perceived as an expression of political interests, its effectiveness will suffer*”¹³.

The intelligence, counterintelligence and security dimension of the National Defense Strategy aims, among other things, to ensure national security and control of hostile informative actions by preventing and eliminating the risks and threats that they may generate, but also at ensuring the counter-information protection of national interests and classified information. “Information protection includes all the organizational, informational and technical actions taken at the level of state institutions in the elaboration and exploitation of documents, for the protection of secrets, the insurance of authorized and hierarchical access to data and information, the control of information for the mass media, the physical and cryptological protection of the information”¹⁴.

All these steps and measures taken in the political, economic, social, informational, legal, ecological, social or military areas, aim at insuring national security based on the rule of law. The state and its citizens are thus sheltered from the dangers that may affect their development, prosperity rights and freedom: freedom of decision or the social and political balance.

Conclusions

National security aims at ensuring normality for citizens and the state, which means lawfulness, prosperity, social balance and political stability in a democratic society, through rights and freedom, through developing the state’s decision-making and acting capacity. The most important document that defines national defense planning is the National Country Defense Strategy. The strategy is a tool that makes a projection of national defense planning and national security, and provides the strategic framework for organizing and coordinating activities. For the implementation of the National Defense Strategy, a plan has been developed, containing strategies, public policies and sectoral plans, as well as a Guide to the National Defense Strategy (SNAp Guide).

¹² Kęstutis Paulauskas, “The Alliance’s evolving posture: towards a theory of everything”, *NATO Review Magazine*, July 06, 2018, available online at: <https://www.nato.int/docu/review/2018/also-in-2018/the-alliances-evolving-posture-towards-a-theory-of-everything-nato/en/index.htm>, accessed on August 23, 2018.

¹³ Teodor Frunzeti, *Conceptualisation of security. National security strategy. Case study – Romania*, Editura UNAp, București, 2012.

¹⁴ *Drepturile și libertățile informației, art. cit.*

The guide comes in support of those responsible for the SNAp's operationalization of state institutions, as well as citizens, facilitating the understanding of the strategy and explaining the importance of security in a society.

The 2015 Strategy introduces the broad national security concept to the public space. This refers not only to the classic areas of security - defense, public order, information - but also to sectors such as education, health, economy, energy, finance, environment and critical infrastructure.

In accordance with the SNAp information, counterintelligence and security dimension, a particular focus is on "*knowledge, prevention and elimination of the risks and threats generated by hostile informative actions, ensuring the counter-information protection of national interests as well as classified information*"¹⁵.

This desideratum is also achieved by maintaining a balance between the right and the need to have access to public information, and the obligation to classify certain types of information in order not to jeopardize national security.

Although we are talking about information of public interest, sometimes, this information cannot be declassified or published because this would be detrimental to the public interest. Thus, we are talking about information classified as top secret, which is an exception to the principle of free access to information of public interest, although, in practice, these are also used in the interest of the public, but by specialists.

We think that in order to maintain internal stability and strengthen the international security environment, a *National Doctrine on Information Security*, approved by the Supreme Defense Council in 2004 was developed in accordance with the Constitution of the country, providing the conceptual basis for cooperation with the national security services of NATO member states. They establish by mutual agreement which are the information, values and resources that need protection, but also what the common defense standards are.

Information for security can be given national or community strategic assets. Dissemination and access to some information are often restricted just to secure the security component.

There needs to be a balance between the public debate and the experts' contribution, for the establishment of the Security Policy, as well as a balance between access to information and information classification, fully covering the space between the legitimate security need and the essential need to inform the public.

In conclusion, it is essential to capitalize on the information decision-makers need and to protect the channels of providing additional information.

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¹⁵ *Strategia Națională de Apărare a Țării pentru perioada 2015 - 2019 - O Românie puternică în Europa și în lume* -, 2015, (In English: National Defense Strategy of Romania for 2015-2019).

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DEVELOPMENT TRENDS FOR A 21ST CENTURY EFFECTIVE SMALL NAVY

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Abstract: *Small navies have always been in a race to keep up with a dynamic security environment. They have to overcome not only the specific problems of adapting to emerging threats and assuming new responsibilities in the maritime domain, but doing so with a limited number of assets – both in number and capabilities –, threatened by budgetary cuts or insufficient funding – with effects that prove the more severe the smaller the navy. All this happens under close scrutiny of public opinion concerning military spending and their usefulness – small navies being in general national income consumers, rather than wealth generators –, and most of the time overstretching personnel and assets to honor a full range of domestic and international commitments. This paper will highlight some development trends that allow a small navy to keep up with an ever changing security environment in an effective and efficient manner.*

Keywords: *small navy, development trend, effective, maritime security, solution.*

1. Small navies – relevant parts of the maritime security backbone

The state of flux in which the maritime security domain dwells in for the past 20 years produces changes to the paradigm of what navies, albeit big or small, are supposed to do. All of this happens detrimental to their traditional warfare and power projection responsibilities with the purpose of waging war, and more in what maritime forces are asked to do in non-war-like environments where seldom there is a need to apply lethal force. “Most fundamentally, our naval forces are designed to fight and win wars. Our most recent experiences, however, underscore the premise that the most important role of naval forces in situations short of war is to be engaged in forward areas, with the objectives of preventing conflicts and controlling crises”¹. The current maritime situation asks actors to take an active part in building a security environment that allows for free usage of the sea. “Maritime domain security relies on the ability to build a comprehensive awareness of maritime activity”². Hence, situational awareness becomes the precondition of maritime domain security. Small navies can and are part of this common effort to keep seas open and safe.

Nowadays sees navies around the world engaged in a diverse non-war suite of activities, commonly referred to as Maritime Security missions. The full list comprises of anti-piracy actions (e.g. *Operation Atalanta* in Somali waters) and maritime situational awareness – MSA (e.g. *Operation Sea Guardian* in the Mediterranean), illegal immigration control activities (e.g. *Operation Sophia* near Libyan waters), humanitarian assistance and disaster relief – HA/DA missions, imposing embargos deemed necessary by international forums (e.g. UN, EU) in different parts of the world and safeguarding and securing SLOCs

¹ U.S. Department of the Navy, *Forward...from the Sea*, Washington, 1994, p. 4.

² Ralph D. Thiele, “Building Maritime Security Situational Awareness”, *ISPSW Strategy Series: Focus on Defense and International Security*, Issue no. 182, April 2012, p. 1.

and freedom of navigation.

That is not to understand that navies have lost any of their more traditional missions during peacetime or wartime, amongst which we number surveillance and Intel gathering missions, projection of power in order to protect and advance maritime interests³ in areas of responsibility and conducting conventional warfare.

Most of the time, all of this happens in an international framework, with navies cooperating on some areas, at the same time trying to achieve their own individual goals. This creates an interesting environment to operate in, where at one end there are different navies around the world contributing forces to a common goal, and at the other, navies' forces just juxtaposing over the same body of water, each trying to accomplish their goals.

Small navies, in what it concerns international cooperation, found an opportunity to expand beyond their common roles of safeguarding national interests in and near their territorial waters and becoming ever more present in areas further away from home turf. This allowed small navies to tackle some of the missions usually reserved for navies of a different stature – those capable of projecting power far away from national waters – in the range of Maritime Security missions, most of the time. This particular fact instilled the idea that small navies can accomplish more than what was expected from them in the line of Maritime Security missions, while engaged in naval cooperation. The amount and the diversity of jobs small navies can execute, specific to the current maritime security scenery, allows them to supplement, with quite high rates of success, way bigger navies, provided enough coordination is available. As a result, small navy states started pushing more and more items concerning Maritime Security onto their national agendas, and their implications for the *blue economy*. This policy is being “reflected in several governmental and intergovernmental strategies for maritime security in the past decade – including those of the United States, United Kingdom, France, India, NATO, the European Union (EU) and the African Union (AU) – as well as in multilateral statements [...], and in the work of the annual international Our Ocean conference on the theme”⁴, resulting in smaller navies becoming ever more present in the international scene. Nowadays is not uncommon to see some numbers of assets belonging to different small navies of the world engaged in international commitments, complementing their bigger counterparts, far away from their natural operating areas. Their presence in theaters around the world should be interpreted as an expression of commitment to the world's security effort from the state operating those navies. In consequence, small navies started to be regarded by many as a pool of potential for augmenting the ranks of multinational naval forces around the world in dealing with current problems – ensuring, thus, a role for all smaller navies for solving what is one of the “latest additions to the vocabulary of international security”⁵ – Maritime Security.

2. Scanning for a small navy's identity

Eric Grove qualifies as navies “all those forces capable of exerting forces at sea, not necessarily just those bureaucratically organized into a ‘navy’”⁶. That is to say *the sine qua non conditions for a navy to exist are to have assets and to be able to use that assets in a way to influence events at sea*, despite being little in numbers and of different types and quality.

³ Michael Mulqueen, Deborah Sanders, Ian Speller, *Small Navies. Strategy and Policy for Small Navies in War and Peace*, Routledge, New York, 2016, p. 151.

⁴ Christian Bueger, Timothy Edmunds, “Beyond seablindness: a new agenda for maritime security studies” *International Affairs*, Vol. 93, Issue 6, Oxford University Press, November 2017, pp. 1293-1311, available online at: <https://academic.oup.com/ia/article/93/6/1293/4111108>, accessed on October 29, 2018.

⁵ *Ibidem*, pp. 1293-1311.

⁶ Eric Grove, *Future of Sea Power*, US Naval Institute Press, Annapolis, 1990, p. 237.

This definition offers a simple and comprehensive solution to defining what a navy is. It also coins the idea that a navy shall influence the maritime domain in a way, obviously very much dependent on its effective power to do so.

Many will argue that a small navy is “small” as opposed to what a big navy is, with little or no argument to be further given. So, at first glance, “one knows what a small navy is by knowing what it is not (i.e. a large navy)”⁷. For the sake of argument, everyone can safely say that the US Navy is a big navy, representing in mind this exact image when asked to think about this matter. In opposition, when one considers a small navy, there is not such a unitary vision. One could consider that almost all navies are small, in respect to the US Navy, even though specialists argue far and wide about what qualifies as a small navy and its specific characteristics. This way of thinking and qualifying navies creates, from the start, *a duality* – in other words two categories that should, in some manner, exclude one another.

The matter of fact is not that simple though. One cannot easily qualify a navy with the generic term “small”, just by “knowing” it is not as developed in terms of sheer number, especially when compared to navies that are a factor of magnitude more prominent in that particular characteristic. Another problem that the big-small duality brings in is *where a navy stops being small and starts being referred to as big?* This question is already forcing a way of ranking navies in some manner that allows the term “medium navy” to be used. It becomes clear that ranking a navy must weigh in a number of factors and has to allow for a certain leeway in arranging navies.

Classifying navies from smallest to biggest has been discussed by many an institution and centers along the years, but in the past decades studies started considering aspects like training of personnel or quality of ships and level of technology in order to create a ladder more in touch with current situation.

Michael Morris produced in 1987 a ranking system based on somewhat profoundly quantitative aspects that became the norm for future works on classifying navies⁸. His approach took into consideration aspects of specific types of ships, modernity of equipment and weaponry – only qualitative aspect, additional naval power services and resources to support naval power. It is to be expected that no ranking system can fit perfectly over the current reality, but what Morris’s system failed to some extent to consider was pure qualitative aspects of navies, like level of qualification of personnel or motivation. Thus, because of this absence, the system could not cover for a certain degree of randomness that comes with considering human actions or political motivation, to give a few examples. Drawing a small navy’s identity must also consider pure qualitative aspect of a fleet; one cannot quantify a navy based only on its sheer numbers, based on a pure roster. The identity of a small navy, similarly to a big one, lies also in the quality of its ships and personnel, along with number of and types of units.

Basil Germond worked on a solution to the mostly quantitative ranking system of navies used still by compiling a table of criteria and specific indicators⁹ to be used in conjunction with one another, and starting creating connections between those aspects historically considered (e.g. number and types of units, firepower) and those just recently making their way into scholars’ minds (e.g. possibility and quality of cooperation, personnel qualifications, moral).

⁷ Michael Mulqueen, Deborah Sanders, Ian Speller, *Small Navies. Strategy and Policy for Small Navies in War and Peace*, Routledge, New York, 2016, p. 32.

⁸ Michael A. Morris, *Expansion of the Third World Navies*, The Macmillan Press LTD, London, 1987, pp. 22 – 24.

⁹ Michael Mulqueen, *op. cit.*, p. 41.

Criteria	Indicators
Order of battle	Number of vessels Tonnage and types of ships
Order of effect	Power of weaponry State of modernity
Versatility/flexibility	Types and diversity of missions
Range/sustainability	Geographical reach Capacity for sustained operations Logistics and afloat support
Autonomy and cooperation/interoperability	Capacity to operate autonomously Capacity to operate within a coalition
Other qualitative and political adjustment variables	Professional qualification Sailors' moral disposition Correlation between means and objectives Voluntary limitations

Table no. 1: Ranking Criteria and Indicators¹⁰

Assessing a navy through light of the matrix presented in Table 1 promises to better offer a scan of what a navy is, its roles, its relevant power, and its core identity in the current security context. Thus, he envisioned a number of six rungs on the world navies' ladder, from analyzing the factors described in Table 1. Out of six ranks, three fall under the general term "small navies", comprising of *Symbolic navies, Navies able to conduct constabulary roles in their TTW and costal defense, but unable to take part in projection operations* and *Navies able to conduct constabulary roles in their TTW, costal defense and to participate, into a coalition, in limited projection operations*. Rank four is reserved to medium navies, while ranks five and six are considered to be reserved for big navies, with the latter being the *archetypal navy envisioned by planners and scholars alike – Navies able to perform all kind of missions for an indefinite amount of time and without any help*.

The question for what is essentially a small navy's identity could find a definitive answer in its very definition – a small navy is a nucleus of certain capabilities, most of the time oriented on constabulary and territorial defense roles. This orientation is given, most of the time, by political and economic criteria. Innately, a small navy will try to develop by accessing more functions and missions, opening to the international scene as well, whenever possible. In this aspect, small navies shall stride at least for a rank three, in absence of better options, considering the current maritime security domain. Being able to take part in a power projection operation in cooperation with other actors allows for pushing international, far-from-home points on a nation's agenda. Thus, the gap between first two ranks and the third one is one of essential value for modern day small navies. Also, overcoming it presents in itself as substantial leap towards a more internationally present navy on the current maritime scene. Nowadays, being in a position to take part in Maritime Security operations can be considered as the informal prerequisite for this.

3. Development trends for small navies

Constabulary roles, international and national commitments, guarantying security in the area of responsibility, adapting to a maritime domain changing for the past few decades, all of these are missions navies must accomplish and all are prone to create difficulties. How

¹⁰ Michael Mulqueen, *op. cit.*, p. 41.

decision makers handle issues, direct resources, and distribute assets and personnel results in a navy's effectiveness and its capacity to accomplish its destined role. The subject is open to discussion still and of interest for many a navies around the world. The main discourse is centered on efficiency and effectiveness of small navies and their roles in the current maritime domain picture.

3.1 Expenditures and financial digressions

Military strategists and leaders alike would convene on the fact that a navy *demand*s financial efforts in order to be a credible provider of security. From a military point of view, one could argue it has to do with the fact a navy requires a certain sense of development in terms of size and functionality to some extent, and a real need to keep up with technological developments, adapting to new maritime security challenges and incorporating new changes. All of this cannot be without associated costs that most of the time is subject to discussions for small navies. Given the nature of small navies' budgets being innately limited, efficient spending must be on the agenda of all military decision makers. There's no real surprise that budget planners have to find innovative ways to make the most out of budgetary resources. *Military spending must be the most permeated domain in terms of innovative thinking for a 21st century navy in general, and for a small navy in particular.* This includes a combination of measures ranging from market studies, open source innovation and technologies, adaptation of existent technologies to current and future needs, realistic development and acquisition medium- and long-term plans, "buying smart and for the future" and a solid personnel management program. The range of measure proposed might seem overwhelming, but the finite scope would be to operate a small navy "to standards of cost, efficiency and value for money closer to those which would apply in the civilian world"¹¹. The Irish Navy, given here as an example, considered this policy as pivotal for their on-going process of modernization started at the beginning of this century, resulting in a navy that operates with increased efficiency.

There is not much room to argue that small navies, in general, are net consumers rather than national wealth producers and/or enablers. In the wake of the financial difficulties created by the 2008 crisis, the political discourse of many countries concerning budgetary spending shifted its gist. Words like efficiency and austerity started making the scene, some of them being here to stay for a long period. Efficiency is the word of the day even now, a decade after, when it comes to spending. "In all areas of public service, there is constant pressure to increase expenditure and a tendency to associate re-development with a greater share of resources. This approach is unrealistic and in defense [...] there is a need for a better management of resources and to develop the necessary dynamism and flexibility to ensure the organization gears itself for changing circumstances"¹².

Given the fact that small navies are particularly vulnerable to austerity policies, an effective small navy should consider shifting colors from consumer to net wealth enabler. This particular point might be the most problematic, though, for a small navy. Generally speaking, a small navy lacks the necessary assets to create a "critical mass" of logistic requirements in order to enable and generate wealth through circulation of goods and monetary resources, direct and associated employment. Not to make things easier, the other big avenue of economic wealth is as well affected; the budgetary constraints will limit a small navy's ability to invest in research and development. As such, a small navy must seize opportunities; combined ventures with civilian companies, accessing and adapting open-source solutions for current and future needs and promoting emerging innovations should be

¹¹ Michael Mulqueen, Deborah Sanders, Ian Speller, *Small Navies. Strategy and Policy for Small Navies in War and Peace*, Routledge, New York, 2016, p. 71.

¹² Republic of Ireland Department of Defense, *Department of Defense Whitepaper*, February 2000, p. 9.

on the agenda of every small navy's in order to keep up with current development trends in terms of maritime security solutions in general, and high-tech and IT in particular. This, in return, will generate revenue, employment and lines of development.

3.2. Administrative issues and efficiency

There is no secret that small navies must do with an administrative apparatus that is seldom sufficient for the range of activities and proficiencies necessary. A small navy has, most of the time, the same type of needs for specialized services and products as a big one, the distinct shortcoming arising being a corresponding small number of personnel in charge with responding to these particular requirements (i.e. logistics, acquisitions, medical services, financial, legal, IT etc.). The amount of work related is hardly ever small and most of the time its entirety lies upon the shoulders of a few, if not just one particular individual. Therefore, "operational inefficiencies can occur in areas ranging from administrative support to gunnery and intelligence analysis expertise at sea"¹³.

A potential solution to this problem must weigh in two prevalent options. On one side the necessity to train own personnel in those specific fields in order to have permanent and direct access to these fields of expertise, on the other the opportunity to acquire expertise from outside sources, only when the need arises. Neither alternative is without shortcomings for a small navy as well. In the first case, one must consider the potential loss in efficiency of previous training of personnel selected and the looming threat of increasing the administrative apparatus for a duty that might not be continuously necessary, detrimental to the operational part of a navy. The small number of people needed for a certain field also brings the question of feasibility to create training programs, most of the time the solution being accessing outside training programs that add up in terms of cost as well. On the other side, the costs associated with procuring expertise from outside sources has associated, usually high costs and it is not permanently available. Now, finding a tailored solution is a matter of assessment with specific expertise domain to be integrated into the navy through use of dedicated personnel, and rest of them being subject to procuring from outside sources. An objective indicator that could help decision makers must be the frequency at which each specific requirement needs be ensured throughout the years.

Another operational small organization inadequacy that has a high-risk of materialization in small navies is derived from merging services and departments in order to cope with small numbers present, albeit in administrative or operational roles, ashore or on ships. This leads to a need of multiple-specialization of personnel and, even though might be seen as an advantage up to a point, leads to contrary result. The necessity to act on multiple domains, sometimes not even adjacent, does not allow personnel to excel in a few finite ones. Furthermore, duty related loads resulting from assignments in multiple domains generate stress in an otherwise already stressful environment. To add up, most navies struggle with amounts of administrative menial time consuming work that stem from normal day activities.

Navies, especially those lacking manpower, should turn to the business environment in order to search for models of management to solve this problem. Drawing a parallel between certain business administrative models and a navy could seem a bit odd at first sight. In fact though, there are many sectors in which a policy of efficiency that is forcefully imposed on businesses by the free market lead to solutions to administrative issues, especially in following years after the 2008 economic crisis. The civilian discourse revolves more and more around systematic innovation – basically a framework for efficiency. In a few words, systematic innovation means "an approach to organizational management, derived from industrial economics, which promotes user, lead user and open-source problem-solving

¹³ Michael Mulqueen, Deborah Sanders, Ian Speller, *Small Navies. Strategy and Policy for Small Navies in War and Peace*, Routledge, New York, 2016, p. 55.

models”¹⁴. Promoting personal proficiency in certain domains and then harvesting this particular experience whenever the situation arises in order to solve problems that arrive at both levels operational and administrative is the way to go for small organizations, whilst open-source models can provide different perspectives and an influx of new ideas in a rather closed system. *Open-source problem solving looks even more appealing as small navies usually lack the man-power to create dedicated think-tanks for every issue that may appear.*

Every small navy should consider its administrative apparatus in terms of efficiency, productivity and effectiveness. This would translate inevitably in weighing its size in comparison to the operational arm of the navy and asking if in its current form it really suits the navy’s needs and if the management control is tuned up to the suitable degree. As previously stated, it is no surprise a small navy has to make do with small numbers of personnel that have to accomplish a demanding suit of menial tasks related to operating navy (i.e. assessments, various situational reports etc.), apart from their more demanding assignments. This leads, more often than not, to inefficiency in the flux of documents and assignments that might impair those activities that are of real importance, if not dealt with in a coordinated and rigorous way. In order to do so without needlessly supplementing the ranks of ashore personnel, a policy of control that follows “the changes in management controls focused on formalizing administrative control [...] with regulation and standards, opening different control elements to external scrutiny, changing the scope and direction of reward and compensation schemes, and reinventing and redefining cultural (read traditional) controls”¹⁵ might do the trick. In line with the previous solution, the business world could offer a lot of hands-on experience.

3.3. Bolsters for a small navy’s growth

Small navies may need to grow from a variety of reasons. The current maritime security domain emphasized the need for projection operations. The full specter of threats that emerged since the end of the Cold War (economic threats, migrations, transnational criminality, human right violations, civil unrest, environmental degradation etc.) meant navies adapted from a national-centric agenda, oriented in the near vicinity, to a global one, set on countering threats at the very source. It was only natural for coalitions to emerge, operating under endorsement of different international entitled forums. Lead small navies saw in this the opportunity to promote own power projection dreams, the nature of missions and the necessary involvement in international coalition allowing them to be effective parts of maritime security endeavors. So, their evolution became linked to the rhetoric around maritime security missions, allowing them a bolstered growth, both in terms of functionality and size. The linear trend towards a global navy, thus, became less important, multilateralism offering a prop to small navies. The innate inability of a small navy to sustain projection operations by itself is reduced whilst in cooperation. The efforts to take part into multinational frameworks should focus on enabling small navies to “be able to participate in maritime operations together with other countries, [...] within and outside (ones) region. Through them, (the national state) will be able to effectively contribute to the protection of shipping and other maritime activities”¹⁶.

The public opinion saw and understood the necessity for a navy to be part of international efforts to stabilization and free usage of seas in the era of globalization, which

¹⁴ *Ibidem*, p. 52.

¹⁵ Pall Rikhardsson, Leif Christensen, Carsten Rohde, Catherine E. Batt, “Financial crisis and changes in management controls in banks”, *Chartered Institute of Management Accountants Executive Summary Report*, Volume 12, Issue 1, Copenhagen Business School, Frederiksberg, 2016, p. 9.

¹⁶ Swedish Ministry of Defense, *A functional defense: Gov. Bill on the future focus of defense*, Stockholm, 2009, p. 2.

allowed more budgetary allowances for small navies. This prop was used with similar rate of success by almost all small navies of rank 2 and 3 that take part in international efforts for maritime security. While big navy focus on power projection capabilities, small navies found in multilateral frameworks the chance to be seen on the international scene. Small navies “have the possibility to overcome their inferiority if they manage to integrate within multilateral naval frameworks and coalitions, as this allows them to contribute, even modestly, to the general effort consisting in projection security and securing the liberal international order”¹⁷. So, in other words, a small navy must do and *can do* with current assets and means in order to deal with emerging threats, whilst in partnerships with other small navies, provided the proper coordination exists. “Together navies must do a lot more with what they have, reinforced by a few new enablers.”¹⁸

3.4. Operational and technological adjustments

Starting from the “critical mass” point of view concerning small navies’ number of units, a weakness that permeates the operational branch of a small navy is portrayed by the dependency of outside providers for assets, sensors, weapons and technologies. Apart from the obvious cost related deficiency connected to acquiring equipment and platforms from outside markets, which usually equates in higher acquisition costs per unit compared to those for domestic use, a main downside is the possible reduction of national independence of decision. At times, buying from one particular provider comes with strings attached and will generate a sort of strategic dependency. Small navies can devise workaround solutions either by diversifying their strategic dependency through accessing more diverse markets, open-source solutions or commencing own development programs (even if through transfer of technology). A word of warning, “*all navies that cannot produce what they need themselves have the vulnerability that come with dependence and that dependence gets worse the more they need*”¹⁹. Usually, acquiring military-grade technologies, sensors and high-tech weaponry are very sensitive matters that imply to a very much degree the political decision makers to iron out all the necessary details. Governments should have in mind sentiments of actors being directly and indirectly involved in military equipment and platforms transactions. For this particular reason, navy military planners and decision makers should present solid and documented proofs beforehand if a particular asset must be acquired. Once again, lead users inputs should be actively sought out for this matter.

At an operational level, if a small navy is not providing reliable value for money, it will become subject to public pressure and scrutiny. This may result in downsizing, reduction in budgets and overall a reduction in interest from policy makers for navy needs, if not controlled and dealt with in an efficient manner. The insidious effect that may result from this is having less and less navy professionals at the policy talks table – resulting in policies that are less likely to serve naval purposes. *A small navy must create the image of a credible security provider, which uses resources and assets in such a way to complement national security policies. In order for this to happen, a small navy must assess current capabilities, and develop those necessary areas in order to meet national and international needs.* It becomes critical for a small navy to be able to convince political bodies of their importance, even though, at times, it is not so easily visible.

Another problem associated generally with a small navy is the “critical mass” issue. Most of the time, a small navy will work with small numbers of assets, stretched far and wide to cover the whole suit of domestic and international commitments. Such penny-packs of

¹⁷ Michael Mulqueen, Deborah Sanders, Ian Speller, *op. cit.*, p. 50.

¹⁸ Julian Lindley-French, Wouter van Straten, “Exploiting the Value of Small Navies: The Experience of the Royal Netherlands Navy”, *The RUSI Journal*, Vol. 153, Issue 6, 2008, p. 69.

¹⁹ Swedish Ministry of Defense, *op. cit.*, p. 22.

platforms pose the problem of cost efficiency, manning and equipping-with refitting being a particular issue. A small navy must weigh in needs and balance them to budgetary possibilities and doctrinal requirements. *Buying smart* and *buying for the future* must be the two pivotal directions for decision makers when the situation presents itself to acquire platforms, equipment, sensors or armaments.

Buying smart would represent the embodiment of technical expertise for the purpose of buying said systems and/or platforms and should strive for lower costs in exploitation, lower personnel requirements through automation of systems, value for money translated in multi-mission capabilities, integration of logistic support through multi-annual plans and overall integration with other capabilities already existent.

Buying for the future would represent the cumulative prediction concerning technology trends and maritime domain developments, resulting in a predilection to high-tech systems that would bring technological advantages, innovative and open-source technical solutions for increased cost efficiency, modularity to ease future upgrading efforts and overall ability of a navy to adapt to the future.

3.5. A personnel problem

On the list of challenges a small navy must face, the matter of personnel sits quite high at the top. Due to its very nature, a small navy will have to make do with a limited number of personnel. This creates problems in terms of personnel management and career development. To add up to the problem, various numbers of small navies have different platforms and structures that each requires specific proficiencies from personnel working. Apart from a handful of specializations that a small navy could accommodate in institutionalized education systems, many competences must be either learned at the job by individuals or in schools outside a navy's direct control. This might result in a deficiency in training, with a direct loss of efficiency. A small navy must find opportunities to train and manage personnel so that gaps in numbers and in training are avoided. Careful planning and accessing training opportunities in national and international context is usually sufficient to solve the training dilemma.

Another facet of the problem is represented by the number of people opting for a navy career. Some navies might have difficulties in manning positions, in part due to remuneration figures. The numbers issue might be solved through correlated scholarship figures to necessity. While promoting the naval career should be a priority for small navies, enlarging the recruitment pool should be the solution. A carefully thought out personnel policy should solve this matter.

Conclusions

Small navies find themselves in a position to become more and more important for the international scene. Current maritime threats, ranging from human right violations and piracy, to illegal immigration, economic threats, and transnational crime needs actors to take an active stand. The rhetoric behind maritime security missions demands naval presence and projection of power on the high seas. In this light, an efficient small navy would be able to take part in coalition endeavors to secure the freedom of navigation and secure sea lines of communications. "Too often, assessments of allied navies are limited to hardware profiles of specific ship capabilities, personnel and training levels, and other detailed statistics. This information is important, but the broader strategic picture must be formulated"²⁰ prophesized

²⁰ Thomas J. Cutler, *The U.S. Naval Institute on naval strategy*, Naval Institute Press, Annapolis, 2015, pp. 65-66.

at that time LTCDR James Stavridis²¹ in 1985. More than three decades after, small navies started to become truly prominent in the relevant maritime security domain, showing potential of being more than a sum of capabilities in light of new events. Taking part in international enterprises of maritime security far from home is a statement of stability and concern for security back home, a statement that small navies can and should make. This is what is relevant now in terms of missions and commitments for a small navy, but that is not sufficient when one thinks of the future. Small navies must seize the moment and convince national decision makers it is time to invest and develop capabilities in order to create the framework for future development, for pushing national agendas and projecting powers at an international level. The truism about “how navies’ development in current time influences their effectiveness and efficiency for years to come” has probably never been more topical. The 2008 economic crisis brought in discussion efficiency and effectiveness even for very developed navies. The impact of such discussions for small navies is clearly of a greater magnitude. Efficient planning, smart budget allocation and innovative thinking are the prerequisites for an effective small navy of the 21st century. It is time to work on the effectiveness and efficiency discourses of small navies, as the moment might be right to obtain more from budget planners and political decision makers alike.

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²¹ James George Stavridis (born February 15, 1955) is a retired United States Navy admiral that was NATO’s Supreme Allied Commander Europe 2009-2013.

LOGISTIC EXECUTION UNIT/INFANTRY DIVISION - STRUCTURE, ROLE, TASKS

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***Abstract:** Tactical logistic support should be configured as a functional system which has to be able to achieve its goal in a simple, continuous and sufficient way. Among the tactical logistical support structures, logistic execution unit/infantry division was designed as a complex structure. Logistic execution unit acts in an infantry division, it is constituted and is operationalized from a logistics base, but the logistics base is a new concept. They function only for fifteen years and did not have a strong tradition. From that point of view, we consider necessary to define, think and research about all the processes that involve the logistics base and its mobile structure: logistic execution unit.*

***Keywords:** logistics, infantry division, mobility, support.*

Introduction

Until recently, the conventional war seemed to be out of the curricula of the war schools of States in the shadow of big alliances, especially in Europe. Nobody and nothing seemed to threaten the world peace in such a challenging way of immense damages and deep traumas. The near reality of the Crimea, the conflict of the pro-Russian separatists in Ukraine, from the eastern border of the latter, the waves of refugees entering Europe through Turkey, walls that are supposed to be raised to the borders by isolating the neighbouring countries and throwing each other seemingly suspicious glimpses, make us increasingly worry about the possible reality of this type of war. Of course, conventional warfare worries political decision-makers of the world who are now sending out rising generation troops and weapons to the extremities of the alliance space, carrying out a multitude of training exercises that seek better cooperation and knowledge among the military. The desired final status seems to be in the field of intelligence and in-depth knowledge of the situation in the field, independent of the information that the map reveals. The events on the north-eastern border of Romania, the European Union and the North Atlantic Alliance, where we have a in the Republic of Moldavia a president with pro-Russian visions and a Ukraine that struggles to diminish the Russian influence in their own space, has created a state of concern in the Euro-Atlantic Chancelleries. In this uncertain geopolitical context, Romania proves to be an island of resistance and determination, with political leaders deeply engaged in meeting their commitments. Romania has become a target of resource struggle with the discovery of Black Sea natural gas fields. These discoveries give our country not only the possibility of becoming energetically independent, but also of being an energy exporter in the Balkans, and at the same time a threat to the interests of the Russian Federation in the energy field.

At the same time, switching from a concept based mainly on the use of land-based troops to one based on high technology will not be a problem of form. As the soldiers were able to see, initially, in the recent conflicts in Bosnia and Kosovo, and in those in which the Allies are part, the C4ISR technology and concept gap between the European and Allied forces in the

American continent is extreme. The air-land fight must take into account the adoption of the general principles of the modern combat, focusing in particular on the preparation and carrying out of combined military - air, land and naval - actions (as the case may be) on the territory of our country, but also of multinational operations potentiated by the technological advantages.

The features of modern army operations, as a result of the improvement of both military theories and combat means, requires the Romanian army to adopt a flexible logistic system, compatible with similar systems in NATO member countries, capable of delivering the core functions of the logistic support.

In this respect, the process of transforming the Romanian army aims at achieving an efficient logistic system, “... *integrated, flexible, computerized, capable of modular rapid adaptation*”¹, which implies, first of all, the relief of tactical units from administrative tasks. From this point of view we consider that the fulfilment of the missions and tasks specific to the infantry division is influenced and conditioned by the functionality of the organizational structures, including the logistic forces, which have a decisive role in ensuring the success of the actions specific to the operation and the granting of the continuous logistic support in the conflict area of this great tactical unit.

1. Missions of the Infantry Division, Large Unit Directly Supported by LSEM

Viewed from the perspective of the above variables, the missions of the infantry division, a large unit supported by the logistic support implementation module, object of this paper work, cannot be removed from the context of the current security environment, missions which, in our opinion, should be permanently redefined by the central government. It must exhibit great flexibility, sensitivity and responsiveness to the dynamics of the security environment development and technological progress. Thus, first of all, the Romanian Armed Forces must be able, through its own efforts, to carry out a complex of actions to discourage potential aggression towards independence, sovereignty and territorial integrity, whether they materialize through conventional, unconventional and/or hybrid aggressive actions, contributing, for that, to regional security since peacetime. The Romanian Armed Forces must also interact and participate in the defence of its NATO and EU partners, promoting regional and global stability, including through the use of defence diplomacy. Last but not least, the armed forces have duties in support of authorities and population in emergency situations and to minimize and remove the effects of technological disasters and accidents.

Within the armed forces for which we have briefly defined the main missions, the infantry division is the great tactical unit of the Land Forces, which has as operational core the brigade and should be able to execute the entire range of military actions, independently or jointly. Thus, it may act under the subordination of the Land Operational Component, or, even if we currently still do not have a tradition to this end, the infantry division can act jointly within multinational forces, either the NATO or the EU, as well as under UN mandate, which means that it can also be deployed in theatres of international operations, and peacetime preparation should mandatorily target this goal.

The infantry division has a great command, manoeuvre and protection capability, as well as a great power of strike, being able to attain the presence, expansion, continuity and domination in the field, to project rapidly in any area where defence needs demand it and to generate both groups that respond to the demands of crisis situations, as well as sizable forces for the state of war. It also has the opportunity to participate decisively and at a lower cost in preventing, discouraging and frustrating armed aggression against Romania and its allies.

In view of this, we consider that the fulfilment of such a diverse range of missions

¹ *Concept of Logistics of the Romanian Armed Forces*, Bucharest, 2007, p. 5.

requires, as a sine qua non condition, that the infantry division be robust, modern, interoperable, able to carry out collective defence operations on the national territory or outside the national territory and self-sustaining, with flexible and highly trained command structures. It must be able to deal with threats from many environments, whether the physical and geographical, cybernetic or electromagnetic environment, by permanently adapting to the modern battlefield. That's why the Infantry Division has the mission to efficiently manage combat actions in enemy-controlled terrestrial space, being able to perform complex manoeuvres, including vertically.

In the following, we consider it appropriate to bring into question the organization of the infantry division in order to understand more deeply the role, the place and the missions that its logistic support structures fulfil in order to support the struggle of this tactical unit with multiple responsibilities, but the limited space does not allow us.

2. LSEM – Role, Structure, Duties, Ways to Improve Combat Training

The most complex and multi-functional and logistically endowed structure of the infantry division is *the Logistic Support Execution Module (LSEM)*. It does not function as a distinct entity, as a stand-alone unit subordinated to the infantry division. At war, it is made up of a logistics base, a unit of a regiment level, and has in its structure management bodies of the logistic support necessary for planning the execution of the logistic support, according to Appendix "R" to the Operations Order transmitted by the division or the support orders sent by G-4 Logistics module of the division. Also, LSEM, as an execution element, has numerous structures for the execution of the logistic support at unit and sub-unit (company) level, capable of implementing the logistic support plans developed.

As the topic of this paper is the logistic support execution module, the defining structure for the second logistic support line, a component in the integrated logistics system, we will briefly describe its main execution components.

The logistics base command headquarters is directly subordinated to the infantry division command headquarters and is responsible for the entire activity that takes place within the base and the subordinate units. The logistics base command headquarters, along with its general headquarters, must be in a position to implement for purposes of logistic support of large units and units (LU/U) the imperatives of logistic support and these must, in our opinion, be anticipation, integration, continuity, rapid response to situations and improvisation.

The command headquarters and the general headquarters must anticipate further missions and for this reason they are obliged to digest and understand the plan and decisions of the commander of the infantry division, translating it into the further needs that the logistics base is bound to satisfy. In our opinion, conflicts are lost and are often gained due to unfulfilled logistical needs. From this point of view, good training, anticipation capability, determines the logistics base commander not only to respond to the needs of the fighter units, but to be prompt to unexpected changes, simultaneously with the assurance of current operations. Commanders of the brigades and infantry divisions must ensure maximum availability of the logistics base commander's participation in the planning of the operations and provide him with all the information necessary for the structures of the base to be able to fulfil their missions successfully.

In order to complete the permanent missions that the logistics base must fulfil continuously, both in peace and war time, it has the following units and subunits at its disposal²: *Maintenance Centre*, unit for the execution of equipment maintenance; a *Transportation Battalion* which, when at call-up, is augmented by additional means of transport, usually of

² The author perspective.

high capacity, superior in terms of the volume that can be transported, but lower in terms of mobility, since they come from economic operators and transporters from all over the national territory; Weapons and Ammunition Dump; Technical Supply Warehouse; Quartermaster Supply Warehouse; Centre for Troop Quarters and Barrack Administration; ROL2 Healthcare Squad with Extended Facilities; The *General Headquarters and Logistics Base Company Service* has roughly the same organization as the brigade company and performs the same missions.

The logistics bases of the infantry divisions on the Romanian territory underwent extensive restructuring, resizing and transformation, their history and the concept of use being relatively new, based on the experience and learned lessons of the NATO alliance partners. In this context, upon creation, the logistics bases were established on the structures of some old brigades, divisions or army bodies, taking into subordination logistic units and warehouses that initially operated within different echelons.

With an existence of about 15 years, the logistics bases of the land forces have defined their own missions, both in peacetime and for war, having hired experienced specialised personnel, both in logistic support and with a background of missions in the theatres of operations, within the Alliance. In my opinion, missions of logistics bases can be defined as follows:

- Planning, organization and dynamic and efficient execution of logistic support for the infantry division under the subordination of the Land Forces General Headquarters deployed on the national territory;
- Planning and realization of the logistic support, corresponding to the functional domains of the logistics;
- provisions of supplies, products and services for carrying out the drill and training programs for the fight of the infantry divisions in the composition of the Land Forces, as well as for the creation, within the limits of the allocated funds, of the reserves of supplies, according to legal provisions;
- Provision of operational stock warehousing and support for storage of troop stock for certain categories of supplies;
- Execution of transport, storage of atypical/surplus supplies, military equipment, weapons and ammunition from operationalised units or units undergoing operationalisation;
- Conclusion of agreements for the procurement of goods and services, including life assurance for the personnel participating in missions in the theatre of operations, according to the powers established by the Land Forces General Headquarters;
- Supply of maintenance to the fighting equipment of facilities equipping the infantry division and of its own equipment;
- Safe and short-term execution of the technical evacuation actions, oversized transport and with specific materials from all classes of materials, supply with the technique and materials;
- Participation in humanitarian missions under the aegis of international bodies and assurance of the logistic support, upon order, of contingents from the Land Forces participating in exercises in the area of logistic responsibility of the base;
- Provision upon order of the logistic support, in a modular system, of some operations in different theatres of operations;
- Timely and qualitative execution of repairs and works for the installation and commissioning of fighting technique equipping the land forces;
- Ensuring conditions for serving meals, equipping and accommodation of manpower;
- Execution of drill activities in order to carry out the logistic support actions, as well as the specific transport, maintenance, evacuation and healthcare activities;
- Ensuring the maintenance and repair of the barracks in administration and those subordinated thereto;

- Carrying out the mobilization, rhythmically, safely and by the established deadlines for the structures covered by insurance and own structures;
- Participation, together with other specialized structures, in limiting the effects of disasters produced in the area of logistical responsibility.

In peacetime, the logistic support execution module is confused with the logistics base and is not delimited as such in its structure. LSEM is not assigned separate missions, has no nominated personnel and does not participate distinctly from the logistics base to applications, camps, exercises, this still being an undefined aspect in the short history of the existence of logistics bases.

On the other hand, warehouses subordinated to the logistics base are almost totally immobile structures, but their purpose is mainly to store, preserve, manage the operational stocks of the infantry division, having a crucial role in the first 30 days of fighting.

As a large regiment unit, having under subordination the units mentioned above, the logistics base has in its organics mobile and immobile structures, not differentiated during peacetime, but many of the mobile components coexisting in almost every subordinate unit.

Of the mobile structures that can be attached to LSEM, we can distinguish³:

- transportation battalion;
- POL⁴ transport and storage capabilities of the transportation battalion and those received at mobilization that can be attached to the transportation battalion specialized in the quartermaster supply transport and POL;

- motor trucks, machinery and tools, passenger and freight transport machines from the warehouses that may participate, however, to a certain reduced extent, as execution elements within LSEM;

- Military Equipment Maintenance Departments (MEMD) subordinated to the maintenance centre that are not attached to the LSEM during wartime, but in peacetime they are managed, trained, coordinated and controlled by the logistics base. They act as separate, self-contained entities with equipment maintenance-specific infrastructure, but have all the mobile elements to support the maintenance of 1st line logistic support-specific equipment (motor truck shops, motor trucks, truck tractors, motor trailers, etc.);

- Mobile Maintenance and Evacuation Department (MMED) is the mobile component of the Maintenance Centre and consists of the technics and MEMD upper maintenance capabilities (able to carry out repairs to a medium level);

- ROL2 Healthcare Squad with Extended Facilities is foreseen to be mobilized or attached to LSEM within military hospitals and is organized on four components: operational medicine department; psychological assistance; injured evacuation squad; servicing squad.

In order to ensure MTF⁵ at the level and flexibility and mobility required by military operations, the ROL2 Healthcare Squad with Extended Facilities must contain medical equipment secured in expandable and non-expandable containers, automated loading/unloading facilities, power generation facilities, tents, means of transport necessary for rapid mobility from one section to another.

Among the *immobile structures* that are part of the logistics base and which cannot be deployed in the combat device alongside LSEM, we can list the following:

- Infrastructure of the maintenance centre and all workshops and facilities for inspection, testing, repairs, displaced on ground that cannot be dislodged;

- Infrastructure of military equipment maintenance units and all facilities for inspection, testing, repairs, displaced on ground that cannot be dislodged;

³ The author perspective.

⁴ Petroleum, Oils and Lubricants.

⁵ Medical Treatment Facility.

- Weapons and ammunition dumps, tactical and non-tactical spare parts supplies, technical supplies, quarter master supplies, with a large part of the administrative and management personnel who can perform various logistic support operations;

- Centre for Troop Quarters and Barracks Administration, which may still support the LU/U infantry division with few technical means that it holds and with specialized personnel in the case of troop quartering in the area of responsibility of the infantry division.

In view of the above, we consider necessary that the activities on which the logistics base and the infantry division fulfil in peacetime must be planned and executed taking into account the mobile LSEM component to be designed for the logistic support of the actions.

For the next period, the current regulations on the drill the units carry out in peacetime stipulate that in 2018 the main effort of training and exercises will be focused on improving drill through constructive, virtual and real simulation. At this time, logistics bases train mainly through execution of real logistics, providing the logistic support of the infantry division to units in the area of responsibility, which implies transport, maintenance, infrastructure, camp services specific to conditions of peace, and the exercises and the simulations executed at the command points arranged in the displaceable garrisons and barracks in peacetime. In this sense, the involvement of the structures of execution of the logistic support for the situations imposed by the dynamics and environment specific to a theatre of operations is almost inexistent. Regarding operational medical support, training and drill for this profile is difficult, with the entire army having a single ROL2 level structure, actually constituted.

With regard to technical endowment for logistic support in functional areas, the main load centre are the supply / replenishment and technical and medical evacuation consignments. At present, the transportation battalions of the logistics bases are equipped with wheeled transport, with possibilities for increasing the conventional crossing capacity, but limited in use for small-sized obstacles, most of them full wheel drive, being of the 1980s generation, Romanian production. Under the conditions of equipping structures with new technique (e.g., TBT or Piranha 8x8), which have different technical-tactical features than the 80s technique for which the transport trucks were designed to support them, the concerns for the endowment of the logistic support structures are commendable, but not enough.

According to the contract booklet⁶: drawn up by the Armaments Department, 2016 was a new start in endowing the logistic structures, with delivery contracts being concluded for the following types of multipurpose wheeled platform trucks semitrailer for heavy and oversized equipment, heavy duty container carrier truck, saddle truck tractor for semitrailer towing, winch and crane equipped vehicle for recovery.

We note that, for the time being, no armoured and/or tracked technical means have been acquired, the means necessary for the logistics base which has the mission to ensure logistically the infantry division, a division which has in its composition structures with numerous means of fight of such type.

On the other hand, from our point of view, the logistics base must have nominated the structures and staff within the headquarters and the subordinated units that will constitute LSEM, on support variants, and they will be involved in joint exercises and applications with structures within the infantry division. At this time, logistics bases are involved in exercises and applications, without the involvement of subordinate logistic support structures, which are usually involved in providing real logistic support. In this situation, logistic support battalions, medical squads, maintenance structures will not be familiar with the conflict-assisted transport, the vaults as the progress of the fight, tactics, techniques and procedures specific to the interaction with the technical means of the units effectively involved in the fight and the

⁶ Buletinul contractelor (In English: contract booklet), Armaments Department, available online at: <http://www.dpa.ro/pentru-contractorii-contracte-romania/buletinul-contractelor>, accessed on November 05, 2018.

measures to be taken in the case of the non-synchronization and the overrunning of the logistic structures by the fighter structures, the provision of command measures meant to control the logistic squads in camp conditions, MTF assurance under the conditions of mobility and the technical equipment in the field as well as medical evacuation modalities and links with top-level medical squads, the provision of technical repairs and evacuations with the help of mobile maintenance equipment, etc.

In the same way, the involvement of logistic support management staff within LSEM which will be formed from the logistics base, together with the squads and related personnel of the subordinated units, and with the logistic support management staff within the infantry division, creates the premises of detailed knowledge and deepening of the logistic phenomenon needed to sustain the forces in the area of responsibility. Also, the elements of the logistics base remaining outside LSEM and the subordinate units that cannot be deployed may have logistic provision responsibilities both for the 2nd logistic support line and for the 3rd or 4th line. In our opinion, it is necessary to analyse the possibility of keeping these elements under the control of the logistics base command headquarters, which becomes the LSEM commander, dispensing the missions that the personnel executes from the displacement barracks, possibly helped by a second-in-command appointed for them, given that the 3rd logistic support line already has well-defined structures, with dedicated personnel and specific missions, including Joint Logistic Support Group (JLSG) subordinate logistics bases.

The need to establish LSEM as a mobile, flexible structure that is perfectly adapted to the type of military operations to which the infantry division participates results from the experience of classical military conflicts to which the armies of the world have participated in the last half century and whose utility has been proven in the theatres of contemporary operations. Thus, during the Vietnam War, the US Army was logistically supported by land-based logistics bases, behind its own formation, with specialized warehouses and facilities in all areas of logistic support, but which had to be protected with strong forces against imminent enemy attacks. Also, the lack of mobility meant for the fighter structures a significant constraint in the realization of large manoeuvres and logistic support over long distances. With these lessons learned, the Persian Gulf wars have used mobile, flexible structures close enough to the front to ensure a greater freedom of action for fighter forces. As we know, despite a well-trained army, of course, with many internal frictions and conflicts, which the international coalition has encountered as an adversary in the Persian Gulf, operations with such logistic support have led to rapid success.

In this manner, the clear definition of the LSEM structure, of the subordinate squads and personnel involved in the logistic effort specific to the 2nd logistic support line, training and drill both in the logistics of consumption and the operational logistics, the in-depth knowledge of the missions that the infantry division can deploy and how to support these missions, the necessary logistics techniques, and the development of procedures and lessons learned from the deployed applications are elements that cannot be circumvented from the core activities of the logistics bases.

The commander, the general headquarters of the logistics base and its staff must be aware of the rules that logistics imposes on armed conflicts, as Tom Peters said⁷: "Leaders win through logistics. Vision, sure. Strategy, yes. But when you go to war, you need to have both toilet paper and bullets at the right place at the right time. In other words, you must win through superior logistics".

Of course, LSEM, as the logistic support implementation structure, as we have shown

⁷ Yasmine Bachraoui, "Become a leader and manage efficiently your supply chain!", Steel Available, February 19, 2017, available online at: <https://www.steelavailable.com/en/become-a-leader-and-manage-efficiently-your-supply-chain/>, accessed on November 06, 2018.

above, has a command structure and the general headquarter, organized by function. In summary, the LSEM command headquarters and general headquarters⁸:

- plan the logistic support for the LU/U Infantry Division and those received in support of the concept of the Division Commander and Chief of the G-4 Module in all areas of logistic support;
- provide information and assistance specific to the logistics field to the commander and the general staff of the division in general, but especially to the G-4 Logistics module;
- plan, coordinate and supervise the establishment of the logistic support line according to the operational design within the logistic responsibility area;
- operate under the co-ordination of the Movement and Transport Officer (MTO) within the infantry division for the planning and control of the use of land and air transport means from the organic group or received in strengthening for the accomplishment of administrative or logistic missions;
- manage the activity of consolidation of the forces from the organic group of the infantry division and those received in support or strengthening;
- receive and execute the orders and rulings received from the command point (CP) of the infantry division. They can also co-ordinate support operations for the CP back-up, but this responsibility falls mainly on the division's support battalion;
- contribute to the evaluation of the possibilities of logistic support of the infantry division plans.

In order to accomplish the missions entrusted to them, the LSEM Command Headquarters use, with maximum effectiveness, the mobile structures of the logistic support that have been previously identified, ensuring the replenishment, maintenance, medical facilities at times and at the right places to provide the necessary logistic support and the freedom of movement of fighter forces.

The commander of the Infantry Division bears the full responsibility for the security of the operations in the entire area of responsibility. Within it, the logistic operations carried out in the background are of overwhelming importance. The general headquarters of the infantry division must plan and control front background security in order to protect logistic forces and facilities existing in the area, to prevent and to minimize enemy interference with command-control system and communications system, to prevent interruption the flow of supply, to ensure the freedom of movement of the units towards the front and back, to ensure the continuity of the logistic support of the units that act at contact, in depth and in background, to identify, to fix and to neutralize the enemy incursions in the depth its own formation and to provide the necessary measures to restore the damage caused in the area. At the same time, however, the G-4 logistics module of the infantry division is responsible for logistic planning and must work closely with the general headquarters and the LSEM commander to be responsible for the logistic operations under the 2nd logistic support line. LSEM is responsible for the security of its own districts and communication pathways in the logistic area of responsibility of the infantry division, but up to the demarcation line of the responsibility areas of the brigades subordinated to the infantry division.

In conclusion, a good technical endowment, advanced knowledge of real and operational logistics, good leadership traits, adequate training of general tactics of LSEM staff and efficient planning of force protection, ensure what is said, that behind every great leader there was an even better logistician⁹.

⁸ The author perspective.

⁹ "Great Quotes about Logistics", ADLI Logistics, April 21, 2017, available online at: <http://adlilogistics.com/blog/2017/04/21/logistics-quotes/>, accessed on November 06, 2018.

Brief Conclusions

The logistic support is the amplifying element of military action power and is achieved by planning, organizing, coordinating, commanding and controlling the supply, movement and transport activities, maintenance, medical support, infrastructure, camp services, financing and budgetary policies, contracting and by activities specific to related fields, in order to fulfil the mission of the forces involved in joint operations.

The logistic support execution module is called upon to provide timely and appropriate logistic support for all types of military action the infantry division carries out. This is what we have tried to detail, without trying to be exhaustive. However, the main shortcomings that we consider to be decisive at this time are related to SEL facilities, training of staff forming the logistics bases and logistic support approaches that in our opinion should be focused mainly on the benefit of human resources and on achieving synergy determined by the moral-training-endowment-motivation drive.

The military logistics officer, in light of all that we have expressed up to this date, must be a complex personality, with a broad spectrum of in-depth military training and knowledge, with a lust for work and a high moral. In the end, we can only paraphrase one of the most prestigious American generals that humanity has known: "Gentlemen, the officer who doesn't know his communications and supply as well as his tactics is totally useless". (General George S. Patton, USA).

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NATIONAL INTELLECTUAL CAPITAL AS A CRITICAL INFRASTRUCTURE

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Abstract: *The security environment, in its search for raising the degree of security and to attain and maintain the prosperity of its citizens, has tried to establish standards at the level of existing infrastructure through the concept of critical infrastructures. Current critical infrastructure concepts however, seem to have overlooked one infrastructure essential to human development and currently one of the most important resource for value creation: knowledge. Knowledge was an engine of development for human civilization since ancient times and I believe it is essential for any state that wants a high degree of security and prosperity.*

The concept of national intellectual capital is an important tool in value creation for a state and under specific conditions can be considered a critical infrastructure for the state. It is important to give consideration to the idea of a critical national intellectual capital infrastructure not only to protect a state’s assets but also for value creation and attaining that which I and many others consider to be the most important goal of any modern state: attaining and maintaining prosperity.

Keywords: *critical infrastructure protection, national intellectual capital, protecting intangible assets, knowledge infrastructure, security studies.*

Introduction

The value of intangible resources like knowledge, experience and the capacity to innovate is an incontestable requirement for security and prosperity in the development of human society and civilization. From ancient times to today we know that power and success were not necessarily guaranteed to those that had access to natural resources (resources were at most a limiting factor to development and not always its cause), but to those that had a technological advantage, knew how to use the circumstances of their time in their favor and knew how to use the resources they had available most effectively to achieve prosperity and security.

I believe that knowledge is an important resource of strategic value in human development and that knowledge infrastructures are not sufficient by themselves to identify and protect the intangible assets of the state. That’s why I am trying to see if national intellectual capital can be a critical infrastructure system essential to protect the state’s intangible assets and attain prosperity and security for a state.

1. An “uncertain” world

It is worth mentioning that from the year 1991¹ to our modern day, we have been living through a period of profound transformations, some foreseen to some extent by Alvin

¹ Eric Hobsbawm, *Age of Extremes: The Short Twentieth Century 1914-1991*, Abacus, London, 1994.

Toffler in his book *The Third Wave*² or theorized by Barry Buzan and George Lawson with their concept of *decentered globalism*³ or criticized by Mario Vargas Llosa as a collapse of traditional Western values and culture in his *The Civilization of the Spectacle*⁴. Also, the fact that new forms of power that are taken in consideration like *soft power* or *intelligent power*⁵, and with many other security studies⁶ that shape our world as a world in a state of profound transition at all levels of society characterized by a high degree of uncertainty.

According to the American Psychological Association's Dictionary of Psychology, *uncertainty* is defined in two ways: as *a state or condition in which something (e.g. the probability of a particular outcome) is not accurately or precisely known* or as *a lack of confidence or clarity in one's ideas, decisions, or intentions*⁷. Thus, we can consider uncertainty to be a very dangerous situation to be in, it cannot be completely eliminated but left without control can cause to chaos or even the collapse of the whole decision-making process. I will mention a few of the factors that I consider important as a cause for the high degree of uncertainty in the security environment:

- The Internet, as a new space of conflict between actors, be it at a political, ideological or social level. A space where information is sent and received in real time and was a major cause of the diffusion of power, a place that ended up causing, according to Constantin Hlihor to a change in the behavior of actors at an international level where the focus was not for *the control or accumulation of geographical territories but it changed to the virtual realm and the realm of social representations*⁸ and, according to George Cristian Maior for *cultural, economic and political influence along with the control of the resources of power*⁹.

- Globalization, be it the globalization of security issues or the fact that there are important new actors on the international scene like transnational, supranational and international organizations¹⁰ that are in competition, that can influence or constrain traditional actors with power that is equal or surpassing that of some weaker states.

- The fact that the importance of space and time is greatly diminished has led us to a large number of issues, one of them being what Adrian Cioroianu called "the trivialization of reality"¹¹. He claims that "Phenomenon's that at one point were at the periphery have migrated to the center of our society, our reality is currently created by the media, by a succession of projects and events that are not necessarily connected with the day before, that seem to be the creations of a perpetual present"¹².

A description similar to what Mario Vagas Llosa called "*The Civilization of the Spectacle*", where he claimed that we live in a world where entertainment is on top of our

² Alvin Toffler, *Al treilea val*, translated by Georgeta Bolomey and Dragan Stoianovici, Editura Politică, București, 1983.

³ Barry Buzan, George Lawson, *The Global Transformation: History, Modernity and the Making of International Relations*, Cambridge University Press, Cambridge, 2009, pp. 273-275.

⁴ Mario Vargas Llosa, *Civilizația spectacolului*, Editura Humanitas, București, 2017, pp. 29-30.

⁵ Joseph S. Nye, *Viitorul puterii*, Editura Polirom, Iași, 2012, pp. 133-138, 142-143, 229.

⁶ George Cristian Maior, *Incertitudine: Gândire strategică și relații internaționale în secolul XXI*, ediția a 2-a, Editura RAO, București, 2014, pp. 30-36; Adrian Cioroianu, *Epoca de aur a incertitudinii: America și China, ideile și Primăvara Arabă, Clio, Clausewitz și Lady Gaga la începutul secolului XXI*, Editura Curtea Veche, București, 2011, pp. 21-24.

⁷ *American Psychological Association Dictionary of Psychology*, Second Edition, American Psychological Association, Washington D.C., 2007, p. 1118.

⁸ Constantin Hlihor, *Geopolitică și geostrategie în analizele relațiilor internaționale contemporane: considerații teoretice și metodologice*, Editura Universității Naționale de Apărare „Carol I”, București, 2005, p. 122.

⁹ George Cristian Maior, *op. cit.*, 2014, p. 20.

¹⁰ Constantin Hlihor, *op. cit.*, 2005, p. 140.

¹¹ Adrian Cioroianu, *op. cit.*, 2011, p. 8.

¹² *Ibidem*.

chain of values¹³, where our critical and rational thinking were marginalized and replaced by publicity, which became a determining vector for determining our tastes, imagination and habits¹⁴.

Because of these factors and many others, we have created systems and methods to lower the degree of uncertainty and try to achieve our goals. In this article, I analyze a solution of the security environment – critical infrastructure protection and resilience – and a solution of the business environment – intellectual capital. Both have a similar goal but they reach it through different means: to fight against uncertainty, adapt to the new realities of our world and prosper in it.

2. Critical infrastructure protection, knowledge infrastructures and intellectual capital

Critical infrastructure protection has been implemented as an answer to the fact that some infrastructures of national importance are owned and operated by the private sector¹⁵, from where arose the need to enforce standards – and because of the new hybrid threats to national security – be it terrorism, new means to apply force and power or the high degree of inter-dependence between systems.

Critical infrastructures are defined by US as *systems or assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety or any combination of those matters*¹⁶. The European Union uses an almost identical understanding to define national critical infrastructures but adds a supranational level called European Critical Infrastructures defined as *a critical infrastructure present in member states, which when incapacitated or destroyed would have a profound impact on at least two member states*¹⁷.

From these definitions, we notice that an infrastructure for knowledge seems to have been overlooked. It is a bit understandable due to the difficulty of quantifying intangible assets, but in spite of the fact that knowledge and intellectual capital are resources in a continuous dynamic and thus hard to value or quantify they are also essential for any activity that we take part in and is the only resource that cannot be taken from us by force thus it is warranted to see if intangible assets can have their own distinct critical infrastructure.

The American Psychological Association Dictionary defines *knowledge* as *the state of being familiar with something or aware of its existence, usually resulting from experience or study or the range of one's understanding or information*¹⁸. Paul Roberts defines the *knowledge infrastructures* as *a robust network of people, artifacts and institutions that generate, diffuse and maintain specific knowledge about man and the natural world*¹⁹. The

¹³ Mario Vargas Llosa, *op. cit.*, 2017, pp. 29-30.

¹⁴ *Ibidem*, p. 33.

¹⁵ *Executive Order EO 13010 Critical Infrastructure Protection*, 15 July 1996, available online at: <https://fas.org/irp/offdocs/eo13010.htm>, accessed on September 22, 2018.

¹⁶ *Critical Infrastructure Protection in One Hundred and Seventh Congress of the United States of America*, US Government Publishing Office, 2001, Decision no. 5195, p. 5496, available online at: <https://www.gpo.gov/fdsys/pkg/BILLS-107hr3162enr/pdf/BILLS-107hr3162enr.pdf>, accessed on September 22, 2018.

¹⁷ *Directive 2008/114/CE of the European Council from 8 December 2008 on the identification and designation of European critical infrastructures and the assessment of the need to improve their protection*, Official Journal of the European Union, article. 2, a, available online at: <http://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:32008L0114&from=EN>, accessed on September 22, 2018.

¹⁸ *APA Dictionary of Psychology*, 2007, p. 580.

¹⁹ Paul Roberts, *Knowledge Infrastructures: Intellectual Frameworks and Research Challenges*, p. 2, available online at: http://pne.people.si.umich.edu/PDF/Edwards_etal_2013_Knowledge_Infrastructures.pdf, accessed on September 22, 2018.

challenges of the current knowledge infrastructures is encompassed in a 2013 study where the following major societal and institutional changes are identified: “At an educational level (proliferation of online learning and a crisis of traditional pedagogy); libraries (changes in structures, services and physical spaces); publishing industry (physical and digital books, prohibitive price of research journals and the collapse of the university press), intellectual property (distortions of copyright and patent law, creative commons licensing practices, major differences in the legal framework and practice), global research traffic (rapid growth in mobility for researchers, students, professional expertise and knowledge-based industry) and knowledge policy (research filters, counter-expertise and challenges to expert knowledge organizations)”²⁰. These issues show the complexity of the knowledge infrastructure and how it has its own specific problems that warrant it being part of critical infrastructure systems.

I will try to provide some examples on how some of the mentioned issues of infrastructure can debilitate a state’s ability to function properly with the mention that it is highly unlikely for it to ever cause an immediate effect or have a single component that would, by being destroyed, cause an immediate debilitating effect on other infrastructures but on the long-term can cause serious harm to society as a whole.

An example that for the moment works against knowledge infrastructures as a critical infrastructure is the fact that targeted terrorist attacks against components of knowledge infrastructure are very rare if any, damage to knowledge infrastructure is usually caused by natural disasters or human error. In 1989 for example during the Romanian Revolution, a great fire started at the Central University Library of Bucharest “Carol I” where 500.000 volumes were destroyed²¹; to this day nobody knows how or why the fire started, it might have been a human error, natural causes or a malign action, but the loss of the priceless texts is an irrecoverable loss of national knowledge assets and human cultural heritage.

Other example of a possible attack from an international actor against a knowledge infrastructure is the way social media was used by “alleged” Russian bots to spread anti-vaccine propaganda according to a report from the American Association of Public Health²². Social media and new technologies like machine learning are a perfect example for a way knowledge can be compromised, where uncontrolled and unmoderated flux of information, on one side represents the beauty of our century (cheap access to information), but on the other side is a ripe way of spreading misinformation, attacking other infrastructures and for our case of the knowledge infrastructure: facilitate the politicization of knowledge.

Knowledge are an essential infrastructure for creating and maintaining security and prosperity. It is a complex system with its own specific vulnerabilities, risks and threats that has a long-term impact on society and its people that should be analyzed and protected as its own separate system and not just as a component of other systems. However, the knowledge infrastructure is incomplete and cannot form a critical infrastructure by itself. I consider national intellectual capital to be a system and that could help give form to a critical infrastructure for intangible assets.

The business world sought solutions after the financial crisis in the year 2008. The fact that we are moving towards a knowledge-based society created the need to give value to a company’s intangible assets. Leif Edvinsson defines intellectual capital as *intellectual material – knowledge, information, intellectual property, experience – that can be used to*

²⁰ Paul Roberts, *op. cit.*, p. 5.

²¹ Robert Coravu, *Intermediu difuz: Biblioteca universitară între cultura tiparului și cultura digitală*, Ex Ponto Publishing House, Constanța, 2012, p. 140.

²² David A. Broniatowski, *Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate*, available online at: <https://ajph.aphapublications.org/doi/10.2105/AJPH.2018.304567>, accessed on September 22, 2018.

*produce value*²³. He then split it into two distinct categories: *intellectual capital that thinks (human capital) and intellectual capital that does not think (structural capital)*²⁴. Later a third category – *consumer/relational capital* – where the internal and external relations of a company with the business environment, society and the state are included²⁵ is added to the concept.

However, due to the inherent differences in structure and objectives between a company (a company's main goal is profit) and a state (a state's main goal is security and prosperity), Leif Edvinsson and Carol Yeh-Yun Lin created the concept of national intellectual capital to help small states²⁶ with few natural resources to identify and use new opportunities²⁷. They split the concept into five distinct categories as follows:

- Human Capital (HC) – include as important traits: *wisdom, expertise, intuition and individual ability of individuals to implement national objectives*²⁸. This is better clarified by them as the *general preparedness and talents of the workforce, literacy rating, public spending on education*²⁹ etc.;

- Market Capital (MC) – *general goods in the relation between a state and the global market*³⁰ or *exports, cultural openness, national image, transparency*³¹ etc.;

- Process Capital (PC) – *the cooperation and flow of knowledge what requires structural intellectual assets (databases, information system, laboratories, cybersecurity, national infrastructure)*³²;

- Regeneration Capital (RC) – *the capacity of a country and real investments made to raise its competitive force for the future (investments in research and development, patents, trademarks, start-ups, the number of scientific publications, numbers of patents etc.)*³³;

- Financial Capital (FC) – *Gross Domestic Product, external debt, industrial production in the main branches and inflation*³⁴.

Based on the categories mentioned here we can try to see if it is possible to create a critical national intellectual capital infrastructure.

3. National intellectual capital – a tool to identify vulnerabilities, risks and threats to states assets or a critical infrastructure?

As a tool to identify vulnerabilities, risks and threats, I think that national intellectual capital infrastructure with its distinct categories is a good fit. However, as a critical infrastructure, things get complicated and almost impossible to manage.

It could be a useful tool to discover new risks and threats to social security, find loopholes in legislation that might go unnoticed by traditional methods of analysis and create

²³ Johan Roos, Göran Roos, Nicola C. Dragonetti, Leif Edvinsson, *Intellectual Capital: Navigating in the new business landscape*, Macmillan Business, London, 1997, pp. 34-35.

²⁴ *Ibidem*, p. 31.

²⁵ Abdul Ghafoor Awan, Kashif Saeed, *Intellectual capital and research performance of Universities in Southern Punjab-Pakistan*, in "European Journal of Business and Innovation Research", Vol. II, No. 6, December 2014, p. 22.

²⁶ Taiwan was the first state to try to implement this system, according to Carol Yeh-Yun Lin, Leif Edvinsson, *National Intellectual Capital: A Comparison of 40 Countries*, Springer, New York, 2011, p. 12.

²⁷ *Ibidem*.

²⁸ *Ibidem*, p. 4.

²⁹ Carol Yeh-Yun Lin; Leif Edvinsson, *National Intellectual Capital and the Financial Crisis in Bulgaria, Czech Republic, Hungary, Romania and Poland*, Springer, New York, 2014, p. 97.

³⁰ Carol Yeh-Yun Lin; Leif Edvinsson, *op. cit.*, 2011.

³¹ Carol Yeh-Yun Lin; Leif Edvinsson, *op. cit.*, 2014.

³² Carol Yeh-Yun Lin; Leif Edvinsson, *op. cit.*, 2011.

³³ *Ibidem*.

³⁴ *Ibidem*.

efficient cultural, knowledge and national policies. For example, the Dutch economical correspondent of the site "De Correspondent", Jesse Frederik, wrote an article detailing how companies, through a loophole present in both the Dutch and US legislation, managed to dodge paying half a trillion dollars in taxes from the year 2005 to 2017³⁵. Or how some companies try to undermine social security by implementing systems that have a profound negative long term impact on society, like the issue of popularizing gambling mechanics to minors and vulnerable individuals practiced by some computer game companies and their attempt to patent concepts like "*system and method for driving micro-transactions in multiplayer video games*"³⁶. This shows a clear intent to implement such dangerous systems and a lack of ethics, an event that has garnered the interest of legislators all over the world and has seen partial regulation in Belgium³⁷ and is being investigated in Finland, the European Union, some states within the United States (like Hawaii) and most probably many other gambling regulatory commissions.

The fact that knowledge is an intangible asset with the fact that the effects of losing such resources takes place over long periods works against it as a critical infrastructure. I will use the category of human capital to exemplify this. Human capital is already an important part of infrastructure systems of critical importance to the state. For example, in 2016 the US Department of Energy formed a Strategic Human Capital Plan³⁸.

I consider that the main security risks to national human capital are loss, waste and radicalization. Human capital is lost in two ways, either by the death of the individual or by emigration of competent workforce to other more attractive or developed countries (*brain drain*). An example of a policy to attract human capital is how the USA manages to attract competent and highly qualified workforce through good immigration policy, high living standards and the attractiveness of the ideological concept of the „American Dream". The main issue of powerful countries' is in selection of the incoming workforce and to control the rejection phenomenon that happens sometimes when the human capital from other countries clashes for different reasons with the home country's citizens. Another example of a policy for human capital, in this case for the retention of human capital, is the Hungarian Education Law of 2011. The Hungarian State decided to control the emigration of graduates that benefited from a partial or full scholarship either by forcing them to repay the full amount of the scholarship or work in the country for a specified amount of time³⁹. Small and medium sized countries are sometimes forced to offset the attraction of powerful countries by implementing policies that protect their human capital and secure highly qualified workforce in positions of strategic importance. Hungary's solution was to conditioning and limiting emigration of its human capital.

By "waste" of human capital I am referring to the inefficient use of the available human capital. For example, when the state has too many lawyers but too few doctors.

³⁵ Jesse Frederik, *Bermuda? Guess again. Turns out Holland is the tax haven of choice for US companies*, available online at: <https://thecorrespondent.com/6942/bermuda-guess-again-turns-out-holland-is-the-tax-haven-of-choice-for-us-companies/417639737658-b85252de>, accessed on September 22, 2018.

³⁶ *System and method for driving microtransactions in multiplayer video games*, United States Patent and Trademark Office, available online at: <http://patft.uspto.gov/netacgi/nph-Parser?Sect2=PTO1&Sect2=HITOFF&p=1&u=/netahtml/PTO/search-bool.html&r=1&f=G&l=50&d=PALL&RefSrch=yes&Query=PN/9789406>, accessed on September 22, 2018.

³⁷ Gambling Commission Research Report on Loot Boxes, available online at: https://www.gamingcommission.be/opencms/export/sites/default/jhksweb_nl/documents/onderzoeksrapport-loot-boxen-Engels-publicatie.pdf, accessed on September 22, 2018.

³⁸ *2016-2020 Strategic Human Capital Plan of the US Department of Energy*, 2016, available online at: <https://www.energy.gov/sites/prod/files/2016/03/f30/DOE-Strategic-Human-Capital-Plan-2016-2020.pdf>, accessed on September 22, 2018.

³⁹ *Hungarian National Law for Superior Education 2011*, available online at: https://net.jogtar.hu/jr/gen/hjegy_doc.cgi?docid=A1100204.TV, accessed on September 22, 2018.

Policies can be put in place to incentivize people to go to specific specializations or fields of interest but this requires systems in place (good policies, high level of implication of local business and collaboration between local business and local educational institutions, etc.) to regulate this process.

The issue with national intellectual capital starts here. It is not a system critical to a state's wellbeing but it is a system that helps identify opportunities and risks in the system that through policy and regulation can create value. Loss of value is a bad thing but human society has self-regulating capabilities within itself that can and will most of the time outweigh it.

If you view critical infrastructures from the perspective of that specific element that when destroyed or incapacitated makes the state unable to function properly you might not find national intellectual capital to be part of a critical infrastructure system. If, however, you consider the role of critical infrastructures, those infrastructures that when damaged can negatively impact development of a state or actor at a profound or on a long-term basis, stunting growth and exacerbating social issues, then critical national intellectual capital can be part of a critical infrastructure system.

For example, a way national intellectual capital can become a critical infrastructure that needs protection is when the literacy rating of a country starts falling, as a knowledge-based society is becoming the norm, literacy is very important not only for attaining prosperity but for maintaining any degree of competitiveness on the global market. A state can be limited by current patent and trademark law, some states like China found ways around it by either copying or outright buying high tech producing firms to lower the competitive gap between it and the USA. Others are playing a constant catch up game that, without a national policy to protect intellectual assets is doomed to fail.

Another argument is that when the citizens of a state cease believing in their country and nation it is the start of a downward spiral that will end with the state will cease to exist or the current system will be replaced through a revolution. But that is a rare concept and usually implies failure at almost all levels than the level of knowledge infrastructures or national intellectual capital resources.

This process of creating a critical national intellectual capital infrastructure is a very hard and dangerous one, with many traps, and it requires implication and effort on the whole spectrum of society from scientists to business, educators, policymakers and common people alike.

Conclusions

In conclusion, based on the fact that we live in a world characterized by a high degree of uncertainty, where publicity and „the spectacle” seem to be more valuable than empirical knowledge and rational thought, it is important to take into consideration the role of knowledge and intellectual capital as a strategic resource and the inclusion of critical national intellectual capital infrastructure protection as part of the national critical infrastructure protection system with its own ramifications in all other subsystems.

Currently, attacks against the state's intangible assets cannot be easily identified. On one hand it is hard to prove if and which international actor or group of actors caused the attack; On the other hand the impact of such attacks is hard to quantify - mostly they are used to sow discord and chaos in society by depriving the state of its qualified workforce, by attacking its infrastructure for storing and producing knowledge, by trying to influence and change the way we work and use data, information and knowledge, etc..

Intellectual capital and national intellectual capital are solutions to identifying possible vulnerabilities, risks and threats in the system and help create coherent and correlated

educational, cultural and social policies to protect against these threats and help the state and its citizens attain and maintain prosperity.

Creating a critical national intellectual capital infrastructure is an important link in this networked world; it is a system to protect knowledge in a society that is called a knowledge-based society but currently does not have a system in place to protect it. It will no doubt be an important pluri-disciplinary effort for researchers and policymakers alike to protect and prevent future malign actions of others against this infrastructure, but these efforts are essential to create and maintain a functional, meritocratic, competent and mature society that will not only survive but also prosper in this period of deep uncertainty.

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AUTONOMOUS UNDERWATER SYSTEMS – A FEASIBLE TOOL TO INCREASE THE RESILIENCE OF MARITIME CRITICAL INFRASTRUCTURE

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Abstract: *It is considered that in the field of safety and port infrastructure security, vulnerable objectives and considered as targets from the perspective of the terrorist threat are represented by: operating platforms and equipment, ships, oil and chemical terminals, bridges and inland access ways, transport facilities, industrial processing capabilities in the proximity area. A comprehensive and realistic approach to setting up measures to increase the resilience of such a complex system includes: the dimension of information security, common operating rules and procedures between inter-institutional actors, the implementation of autonomous technological solutions with high effectiveness and minimum risk to the human factor.*

Keywords: port infrastructure security, terrorist threats, resilience, autonomous technological solutions.

Introduction

Resilience has become a prominent term in the last two decades as an abstract idea for a comprehensive approach of better understanding regarding the performance of a system. This concept is related to specific behavior throughout the event of disturbances. One of the first definitions of resilience concept was described as “*a measure of the persistence of systems and of their ability to absorb change and disturbance events, beyond the concept of pure prevention and hardening*”¹. Later on, this concept included three factors such as endogenous and exogenous influence and redemption achievement. The theory of maritime critical infrastructure resilience with its focal point on system performance rather than organism malfunction is a new perspective to be taken into account, having in mind actions related to maritime warfare.

The maritime domain is characterized by customary rules and unconsidered approaches in relation to security and risk supervision to a large degree. From ancient times, responses to naval disasters have been in terms of automation, guideline and education. Maritime critical infrastructure standards have been focused on the design of specific equipment and ship architecture to be used for harbor operations. From this perspective, it seems that it is necessary to emphasize the importance of human factors in the development of a complete approach in order to decrease organizational inaccuracy in the maritime domain.

¹ C.S. Holling, “Resilience and Stability of Ecological Systems”, in *Annual Review of Ecologic Systematics*, Vol. 4, 1973, pp. 1-23.

1. Resilience and security environment

As a decisive point system of interdependent communications, the maritime critical infrastructure is to be well configured to resilience. In a large perspective of security of goods supply and security of the organizational stages and phases, resilience is built by emphasizing on the different stages of the transient act following a disorder and developing strategies and upgrading which reinforce the reaction of the system. The use of resilience building theory seems specific for critical mutually supporting infrastructures, due to dynamical perception in which the system reacts to the shock incident, becoming accustomed and auto-healing, and sooner or later recovering to an appropriate level of performance.

In the circumstances of a complex field composed by human factors, technology and organizational situations, resilience could be defined as the capability to sustain essential operations and accomplish system objectives under an outsized and complex factor, including predictable and unpredictable happenings. Within the structure of resilience for maritime critical infrastructure, there are used four main ways to investigate and characterize system performance such as: monitoring, anticipating, responding and learning.

From the traditional perspective, domestic harbor security was limited to the conventional situation of wars, or likely belligerent actions among nations, as well as supervising and being in charge of preventing illegal activities. The national main pillars to such threats were forces of the Navy and Coast Guard, as well as other national security organizations. The maritime ports of Romania create and keep up modern facilities for the transport of intermodal cargo, moving them from different ships to trains, road transportation or barges. A lot of industrial areas are located at or near harbors to use at short distances inward unprocessed materials for manufacturing and also the capacity to produce goods for domestic or overseas markets. Maritime security is composed by an arrangement of deterrent measures intended to defend shipping and port facilities against threats of deliberate unlawful acts. Security incident is defined, in accordance with European maritime standards, as any suspicious act or circumstance threatening the security of a ship, including a mobile offshore drilling unit and a high-speed craft, or of a port facility or of any ship/port interface or any ship to ship activity².

Port of Constanta is situated at the crossroads of the traffic routes linking the markets of the landlocked states from Central and Eastern Europe with the Trans-Caucasus, Central Asia and the Far East. It is the major Romanian port on the Black Sea, playing a highly significant position as the transit node for the landlocked states in the Black Sea Region. The hinterland of Port of Constanta supports the maritime infrastructure regarding the produced, consumed and forwarded goods to/from the harbor. It includes a vast region in the littoral area. During the last decade, the biggest Romanian maritime platform efficiently served the flows of goods that arrive or depart from/to the several European countries, including: Austria, Czech Republic, Slovakia, Hungary, Serbia, Bulgaria, Republic of Moldova and Ukraine. Although many political and economical changes have taken place in this area and have influenced its evolvement significantly, the traditional transport routes using the Port of Constanta have remained unchanged, due to the competitive advantages of the harbor.³ The economic growth recorded during the last years in the major European countries entitle Port of Constanta to act as the main depositing and distributing centre for this region. The Port is a multimodal transport centre for any type of cargo and an important trade gateway for the

² Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security, Annex 1, Regulation 1, Definitions.

³ *Annual Report 2017 – Port of Constanta*, National Company Maritime Ports Administration S.A. Constanta, p. 9, available online at: http://www.portofconstantza.com/apmc/portal/static.do?package_id=st_rap_anual&x=get&resource=AR2017.pdf, accessed on September 13, 2018.

Black Sea maritime routes and for the riparian countries. The integration within the national and European transport networks makes the Port of Constanta the perfect choice for the cargoes dedicated to the landlocked countries located at the heart of Europe.

Arrivals of sea-going vessels by type of ship/Year	2012	2013	2014	2015	2016	2017
Cargo	2,692	2,525	2,143	1,971	1,812	1,815
Passenger	52	68	95	37	17	13
Port-container	651	579	578	610	684	592
Tank	673	636	719	668	665	608
Bulk carrier	439	533	555	589	607	574
Others	550	492	681	730	546	491
Total	5,057	4,833	4,771	4,605	4,331	4,093

Figure no. 1: Ships by type

In accordance with Regulation (EC) No 725/2004 of the European Parliament and of the Council of 31 March 2004 on enhancing ship and port facility security, Romania has adopted internal legislation under Order No. 290/2007 regarding measures to improve port security⁴. Each port operator, which is operating a port facility, is to accomplish rules under the provisions of *International Ship and Port Security (ISPS) Code*. Constanta harbor has nominated a Port Security Officer who is in charge of applying and maintaining of a security management system, therefore creating an intensely secure environment within the port.

Every year, each business group operating such port capacity carries out a Security Assessment, which is confirmed and approved by the Port Authority followed by an external check concerning its security management system. A dedicated branch of the Port Authority that is working 24 hours/day, 7 days/week reviews the fulfillment with the officially permitted provisions in security subject within the three ports under N.C. Maritime Ports Administration Constanta S.A.'s (NC MPAC SA) authority. A modern boundary secured barrier with supervising and check-in/out structure is being built and is to provide a very proficient control of the access of people, rail cars, trucks and others as a result amplifying the general security stage. Taking into account the significance of port security matter on a worldwide level and entirely acknowledging its responsibilities in the issue, NC MPAC SA has required harmonizing its endeavor in this respect according to the latest governmental requirements adopted by Romania within this framework.

As a result of issuing the Order No. 290/2007 by the Minister of Transport on the enforcement of precise actions to make stronger port security beside the threats of attempts of security, NC MPAC SA has set up different structure by creating the Port Security Department beginning its activity as from July 1, 2007 and having responsibilities in the domain of security matters entirely, as per relevant legislation.

This Order identifies detailed fundamental rules and measures that are frequent for all maritime ports waterways, passable channels, internal channels, as well as related port infrastructure, in order to create an efficient applicable system during some precise mechanisms for observing the fulfillment with those regulations and measures, the Port Security Department (throughout its action and agreed responsibilities) representing such mechanisms. Fulfillment with the stipulations of the Order has guided to the twelve-monthly

⁴ Order No. 290/2007 regarding measures to improve port security, Published in Official Journal of Romania No. 388 from June 8, 2007.

elaboration of a Port Security evaluation for the ports of Constanta and Midia, efforts that are subject of adjusting and supporting by an order issued by the Minister of Transport.

Issuance of the Government Decision No. 876/2007 for the organization and sanction of violation to the maritime transportation management⁵ is also part of this situation. Through article 13 of the previous mentioned paper, a specific number of contraventions to the harbor capacity security administration are defined, therefore endorsing NC MPAC SA to determine such contraventions and relate the correspondent endorsement. This officially authorized paper has become applicable since September 15th, 2007 and NC MPAC SA, throughout its Port Security Department, has finished all compulsory procedures to be capable to achieve duties and obligations that are incumbent upon.

In order to accomplish its objectives, the *ISPS Code* embodies a number of functional requirements. These include, but are not limited to:

- Gathering and assessing information with respect to security threats and exchanging such information with appropriate Contracting Governments;
- Requiring the maintenance of communication protocols for ships and port facilities;
- Preventing unauthorized access to ships, port facilities and their restricted areas;
- Preventing the introduction of unauthorized weapons, incendiary devices or explosives to ships or port facilities;
- Providing means for raising the alarm in reaction to security threats or security incidents;
- Requiring ship and port facility security plans based upon security assessments;
- Requiring training drills and exercises to ensure familiarity with security plans and procedures.

Most important terrorist objectives in maritime domain can be: sea harbors, ships, bridges, oil and gas platforms. Near the sea ports, there are numerous hazards of vulnerable facilities, installations, and critical infrastructures such as: navigation road and rail network, cranes, berths, pipelines, railways, bridges, roads, water supply systems, fuel storage and hazardous cargoes, container terminals, pilot ships and more. Bridges are above all most susceptible to explosive charges or detonations connected with chemical-biological materials. In the recent history, it is well known the fact that Al-Qaeda, among others, intended to attack the Brooklyn Bridge from the New York City and the Golden Gate Bridge in San Francisco. Moreover, all categories of ships may be an important objective for terrorist groups, and the most valuable being military ships, tankers, and commuter ships, because the scale of the emotional impact and notable damage can be realized using attacks on this kind of ships.

The terrorist attack on the US Navy ship USS COLE in the harbor of Aden, Yemen, the year 2000 demonstrated that such organizations are capable to penetrate some port security measures and to exploit deficiencies of the maritime infrastructure. In that attack, 17 crew members were killed, 42 wounded, even though the ship had taken all the required precautionary measures⁶. Another category of ships that could easily be targeted is tankers, and as an extended view, the oil terminals. Using tankers or oil terminals as main targets for terrorist groups, the key objective is to have a large disruption in energy supply, to create a large-scale disaster for marine environment and to gain media interest for such incident. An event like this happened in 2002, near Al-Mukalla oil terminal in Yemen, where a French tanker was leaking crude oil and several slicks were visible, a day after an explosion left a gaping hole in the vessel. The French embassy said the explosion was caused by a small boat

⁵ *Government Decision No. 876/2007 for the organization and sanction of violation to the maritime transportation management*, Published in Official Journal of Romania No. 557 from August 15, 2007.

⁶ "USS Cole Bombing Fast Facts", in *CNN Library*, October 15, 2018, available online at: <https://edition.cnn.com/2013/09/18/world/meast/uss-cole-bombing-fast-facts/index.html>, accessed on October 26, 2018.

packed with explosives that rammed the tanker. The vessel was loaded with 400,000 barrels of heavy crude oil.⁷ In 2004, an attack organized by terrorist group Abu Sayyaf took place in Philippine, against a passenger ship. In this case, there was a death toll of 116 people and 300 wounded.⁸ As it can be noticed, passenger ships are a perfect target for radical groups to generate a large number of human losses.

Analyzing the numerous cases of incidents that are connected with the maritime critical infrastructure, it can be concluded that additional measures and regulations have to be taken to protect a designated area and objectives, in vicinity of maritime ports. From 1970 to 2004, a number of 212 terrorist incidents took place in the maritime domain, averaging at eight attacks per year⁹. The major incidents¹⁰ that could appear inside or near maritime critical infrastructure area are:

- Blowing up vessels inside ports;
- Grounding and sinking ships in narrow channels;
- Use of underwater explosive charges to destroy ships and industrial infrastructure;
- Unauthorized access onboard vessels and harbor area for the reason of laying mines or improvised explosive disposal.

Maritime terrorism can also be realized by many other means that are not easy to identify and prevent. A potential situation is stealing of a vessel by an unknown group that can be used later in a terrorist attack. Additionally, terrorist groups can record their vessels under flags of convenience since there is an easy possibility to hide real intentions, making it hard to distinguish terrorist activities. Another scenario that can be imagined is to acquire and use the legitimate shipping companies by terrorist groups whose ships can cargo explosive and can be directed to collide other ships, harbor facilities or critical infrastructure. One of the riskiest radical threats to maritime critical infrastructures is related to use of Weapons of Mass Destruction in general, and in particular the dirty charges which can be transported into containers in any littoral state.

As it was mentioned above, *ISPS Code* is a strategic paper that releases a new approach of thinking concerning security and launches new directions for maritime critical infrastructure as a core of maritime domain. Increasing threats of maritime piracy, terrorism or crime make it unattainable to think security and safety features as independent issues. This document includes rules and measures, which are covering the main characteristics¹¹ of the *resilience concept*, as is: rebound, robustness, brittleness and sustained adaptability. It is considered that a system rebounds from disrupting or shocking incidents and comes back to earlier or regular activities. In many ways, people use the tag of resilience as the correspondent to the notion of robustness. Maritime critical infrastructure is a multifaceted system where naval experts have continued to understand the issue of complexity and how system becomes accustomed to deal with difficulty and how some governmental organizations overcome the risk of an unexpected failure when events press on the system up to and beyond its limits for altering turbulences and variations. It is compulsory to search for

⁷ Craig S. Smith, "Fire on French Tanker Off Yemen Raises Terrorism Fears", October 07, 2018, available online at: <https://www.nytimes.com/2002/10/07/world/fire-on-french-tanker-off-yemen-raises-terrorism-fears.html>, accessed on October 26, 2018.

⁸ "Bomb caused Philippine ferry fire", in *BBC News*, October 11, 2004, available online at: <http://news.bbc.co.uk/2/hi/asia-pacific/3732356.stm>, accessed on October 26, 2018.

⁹ *Global Terrorism Database*, University of Maryland, July 2018, available online at: <https://www.start.umd.edu/gtd/search/Results.aspx?charttype=pie&chart=target&search=sea>, accessed on September 25, 2018.

¹⁰ Tonci Prodan, "Maritime terrorism and resilience of maritime critical infrastructures", in *National Security and the Future*, Vol. 18, No. 1-2, 2017, pp. 107-112.

¹¹ David D. Woods, "Four concepts for resilience and the implications for the future of resilience engineering", in *Reliability Engineering System Safety*, Vol. 141, April 2015, pp. 5-9.

security tools and governance policies that function across layered networks in security system.

After the promulgation of the *ISPS Code* until now (2004-2017), 95 terrorist attacks have been done in maritime affairs¹². Even though since the application of the *ISPS Code* the amount of terrorist acts has diminished, the risk of terrorist hazard is far above the ground. Maritime critical infrastructure can only be seen as a balance between external and internal security elements that involve a civilian-military synchronized or integrated answer. From the national point of view, inter-institutional actors have to define a strategic, rational, useful and cost-effective mechanism in order to increase the resilience of the maritime critical infrastructure. Our perspective is that such mechanism will have to encompass at least the following factors: its application has to be appropriate for each national security organizations; its approach has to be civil-military; its contribution has to be comprehensive, involving all actors across the customary external-internal security partition; its authority should be based on legal responsibilities; its arrangement has to be integrated to the extent possible in terms of operational tools.

The real challenge will be to convert this set of requirements into optimal arrangement involving civilian and military players. The resilience of maritime critical infrastructure stands out as the ability, which seems to have advanced the furthest in the direction of a civil-military integrated approach. This integration should not be limited to information exchange. More and more, civil and military capabilities overlap in their use, in their technological necessities and even in their financial support. Increasing the resilience of maritime critical infrastructure should be based on data sharing, combining assets, planning of capabilities, training and exercises between civilian and military personnel.

The resilience of maritime critical infrastructure can be seen as vital to national political, economic, social and environmental well being. This concept is much more than safeguarding security at sea through military power. It requires the involvement of many ministries as well as a broad pallet of instruments, civilian and military is needed to deal with security challenges varying from piracy, terrorism, mines to illegal immigration. Spotighting on the major aspects, some directions can be summarized as follow:

- Realizing in advance feasible plans during the design phase: vigorous and against unsure potential scenarios (unexpected attacks from various sources or doubtful outlook require in the energy infrastructure);

- Auto-healing, adjustment and control. The maritime critical infrastructure cannot be considered in every detail to each changeable scenario; as a result, a resilient architecture has to be considered in a manner to avoid the disorder from spreading across the entire organizational body, developing a contagion inside and system wide fall down;

- A quick recovery from the lowest routine level: tough or at random optimization of the improvement and the reinstatement course of action in the face of doubts in the restore development or in the disruption circumstances;

- Make use of interdependencies along with maritime critical infrastructure: internal interdependencies can promote the spread of breakdown across tied organizations. From another view, interdependencies can moreover offer supplementary flexibility in disturbed environment and complementary assets that are able to ease realizing constant surroundings of the tied organizations.

¹² *Global Terrorism Database*, University of Maryland, July 2018, available online at: <https://www.start.umd.edu/gtd/search/Results.aspx?charttype=pie&chart=attack&search=maritime>, accessed on October 26, 2018.

2. The Navy role in maritime critical infrastructure security design

Lessons learned from the last twenty years point out that the answer to an efficient protection for the maritime critical infrastructure is tactical synchronization throughout specific inter-institutional command and control centers. The variety of the risks against our ports and the number of regulatory national organizations that supervise maritime critical infrastructure requires an extended wide-ranging command and control architecture that fuses multi-sources intelligence information, has thoughtful of multiple sources capabilities, and can supply directions to these armed forces in the domain¹³. The asymmetric character of terrorism requires a wide-ranging approach.

The Romanian Coast Guard and Romanian Navy have made significant steps in this area using common concepts. The next stride should be a Joint Port Operations Bureau (JPOB) as a component of maritime critical infrastructure and anti-terrorism force protection. The development of this model into inter-institutional maritime homeland safekeeping is a natural and reasonable further step in the developing issue of harbor security and defense. This is made obvious by studying possible terrorist threats to maritime critical infrastructure and studying the lessons learned from the previous actions, which can be used to increase the resilience of the system to meet the new risks. The JPOB model has to function in a multi-task intelligence mixture and it should be able to manage tactical harbor operations necessary for maritime critical infrastructure protection and it should be accounted as a form for coordinated harbor defense.

The terrorism risk to harbors is a quite new ingredient in the range of naval warfare. This is mainly due to the growing environment of the shipping industry and the country's increasing confidence on sea influence. From ancient times, a nation's naval power has been considered by the dimension and potential of its trade vessels and the projection capability of its Navy.

Nowadays harbors have transformed in highly technological hubs, having completed-integrated infrastructure and projected for the minimum time loading and unloading of ships, a progress that has become highly multifaceted in the age of using containers. Commercially proficient, harbor payload operations are as well extremely reliant on network and complex activities, making the disturbance of the process quite easy and affordable for a possible aggressor. Moreover, the complex aspects of this progress, combined with the growing mass of seagoing commercial ships, have deeply condensed the number of commercial harbors accessible for use by worldwide shipping industry. This has the contest consequence of creating most important harbors more significant economically at the same time as generating them more striking objectives for unpleasant actions.

Agreed on the importance of maritime critical infrastructure to local or global economy and military strength, the possibility to have a large number of victims and the simple way in which an enemy could have the possibility to do violence, a realistic situation is to be made when harbors will be designated as targets for potential terrorist actions. If we face with this scenario, we can think to apply the military planning process to undermine this threat. One of the first steps in this course is to search and analyze the lessons identified in the past that could be exploited in the present circumstances: have we met a similar threat before, and if so, what can we understand and apply from the experience?

JPOB can be considered an accepted alternative for the accomplishment of tactical harbor operations in order to protect maritime critical infrastructure. JPOB is to have some distinct capabilities which can add a real value to harbor and maritime critical infrastructure protection. Acting as a C4ISR center for harbor and its close vicinity area, JPOB has itself

¹³ Robert Watts, "Maritime Critical Infrastructure Protection: Multi-Agency Command and Control in an Asymmetric Environment", in *Homeland Security Affairs*, Vol. 1, Issue 2, Article 3, August 2005.

surveillance competence that can be merged into one inter-institutional widespread operating image, with capabilities such as:

- Coast guard surveillance system;
- Navy surveillance system;
- Automated identification system inputs;
- Harbor authority control camera system;
- Navy waterside security system;
- Border patrol imagery system.

With increasing asymmetric threats in coastal and coastal maritime areas, the naval capabilities of many states have been refined by developing and bringing into operation tactical-operational *autonomous underwater systems* (AUS). More and more countries worldwide have realized that they can improve their low-cost naval capabilities, which is extremely important in the context of not very generous defense budgets. Accelerated technological development in this area has made today's systems capable of executing a wide range of missions such as: marine mine action, information gathering in the operating area, surveillance execution, and recognition of targets in the area of interest, action against adverse submarines.

Maritime combat space is constantly being transformed. From this perspective, the Romanian Navy needs to focus on adapting existing capabilities to meet new challenges or to develop new capabilities to meet the full spectrum of specific missions, given the challenges of the future in terms of underwater domain. A new concept for the use of self-contained underwater equipment envisages a modular approach, closely correlating with the threats in the area of operations - mine fighting, force protection, anti-terrorist actions, maritime surveillance, surface combat action, or antisubmarine warfare in areas with low depths, in the harbor vicinity. This concept allows for a flexible configuration of the equipment and, implicitly, of the battle load, which can be integrated into a submarine autonomous platform. The accelerated development of technologies for the production and use of autonomous underwater systems in the maritime battle space will substantially change the tactics and doctrine of military action at sea.

From an analysis of the aforementioned missions, AUS have the ability to translate very shortly the tasks that result from the planning process into elements of execution, either acting as the main element or being used as factors trip units on board ships, submarines or aircraft, in support of maritime critical infrastructure protection. Using AUS in the spectrum of Intelligence, Surveillance and Reconnaissance (ISR) missions is preferable, especially to the littoral and coastal areas, where threats pose an increased risk to forces operating in that areas. To exemplify, we can mention the mission of surveillance, recognition and identification of ship traffic in the area of crossing points close to the seaside, 24/7 monitoring of known routes used for illegal trafficking in human beings or goods, monitoring maritime critical infrastructure or the damage resulting from a natural disaster. The use of autonomous systems has a great advantage in terms of diminishing the risks to human crew and at the same time makes a judicious relationship between risks and costs.

In order to ensure navigation safety at entrances to its own ports and through mandatory crossing points, the fundamental condition is to carry out an effective inspection of the live work of the ships transiting and checking the moorings, in order to eliminate the danger of improvised explosive devices. These checks are currently carried out by Explosive Ordnance Disposal (EOD) divers and the operations are wear-resistant, risky and require a long time. The whole process of preparing the ship for inspection (switching off main engines and generators, restrictions on the use of sonar, a ban on spillage, etc.) and performing the inspection may take several hours. The operation presents a high degree of risk for divers, so

the option of using autonomous systems is feasible in terms of reducing the risks and reducing the time to investigate the ship's body.

This ability of AUS to achieve in a limited time the inspection and identification of shipborne explosive loads, mooring sites or anchorages is successfully enforced in the area of force protection. The advantage of using autonomous systems in such operations lies also in the possibility for divers to be relieved of such tasks and to entrust missions where the human operator's ability to interpret and act is really needed.

From the analysis of the operational environment, we believe that missions in whom human operators are needed are: launching in the district or the orderly location of the AUS equipment; the introduction into AUS computing systems of the information necessary for the execution of the mission (navigation routes, communication plan, hydro meteorological elements from the area); realizing the CONOPS of AUS use; monitoring the AUS's execution of the established missions; remote verification of the functioning of the autonomous system equipment, especially the communication system; transmission of the self-destruction order to AUS in the case of capturing the equipment; vehicle recovery; repositioning the stand-alone system; dynamic change of AUS parameters.

In order to carry out inspections of the ship's body or berths, autonomous systems shall be specialized in operating in small spaces and shall be equipped with sensors with a very high sensitivity to the hazards of navigation within the ports, especially underwater. The limitations and design difficulties of an autonomous system dedicated to the control and inspection of a ship's body are related to the complexity of the shape of the ship, the underwater obstacles surrounding the mooring berths, and how it responds when an explosive threat is identified. As is well known, the visibility underwater in the ports is very low, as is the acoustic characteristic. These constraints must be taken into account when designing the technical requirements for implementing a system exclusively dedicated to port missions.

The area around the ship and in the vicinity of the mooring places do not provide the best conditions for navigation in optimum conditions of the UUV equipment, traditional methods of moving (using the acoustic channel or the orientation of the magnetic compass), therefore the combined use of the inertial, acoustic and magnetic navigation process is preferred to have the highest accuracy. To be able to carry out inspection of the ship's body, and to follow the shape of the ship, the underwater vehicle must be sufficiently maneuverable and at the same time allow the optimal orientation of the onboard sensors. From the experience of using AUS for these missions, the most used equipment is cylindrical in shape because it provides the best stability. On-board sensors (TV, IR) transmit real-time images to human water-borne operators so that they can distinguish between ship's body protuberances and possible explosive charges attached to it. When discovering such loads, the decision on how to proceed with an EOD diver or with stand-alone equipment will be at the discretion of the safety officer.

In our conception and evaluation, we believe that the use of AUS in the field of maritime critical infrastructure protection should be the main direction of development and use of these systems within the Romanian Navy. The unpredictable and dangerous security developments in the Black Sea area should highlight the need for an ISR approach from a comprehensive and effective perspective in terms of the means that can compete to achieve this goal.

Conclusions

In the wider context of maritime critical infrastructure security and its resilience, we believe that Romania can go through important steps by implementing autonomous underwater systems use in the harbor mission spectrum or in vicinity. The use of AUS as

platforms with a wide variety of sensors provides multiple benefits for scenarios build on the development of the war based on the network. Firstly, the most important privilege of such systems is the possibility of rapidly redeploying surveillance and research capabilities in the maritime area, the mission of which is carried out in secret and without endangering forces and own conventional means. Basically, an expansion of ISR capabilities at the coast even in the area of interest of the maritime forces is achieved. A second advantage is the ability of the autonomous system to act independently, discreetly and with minimal exposure.

The right to use the freedom of sea is fundamental for economic growth and as a mean to project national influence. Harbors are crucial in preserving this connection. But harbors are not stronghold. As open trade and money-making hubs, maritime critical infrastructure is for the most part weak to a committed terrorist action. A successful attack beside national maritime critical infrastructure has the prospective to realize substantial national economic disorder, generate a large number of casualties, and border or stop deployment of Navy warships. In this respect, harbors are rational targets for radical groups bent on striking at weaknesses. The important damage of harbors would have major impact at national level and society.

As a maritime country, Romania is economically and strategically dependent on its harbors and maritime critical infrastructure, a reality well known to potential terrorist groups. A winning action against maritime critical infrastructure in national harbors has the possible effect to make important trade and industry disorder and generate victims and further conflicts. Romania has no faced terrorist threats in its littoral since now, but lessons learned from other maritime nations present an important assessment about thinking how to protect harbors in the nowadays time. The analysis of these lessons has to be taken into account from the perspective of the latest asymmetric terrorist risks. By investigating other nation's cases and bearing in mind current maritime inter-institutions capabilities approach, a coherent and integrated C2 solution can be developed to successfully Joint Port Operations Bureau efforts in strategic security of maritime critical infrastructure.

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THE CONTRIBUTION OF GEOPOLITICIANS WITH GEOGRAPHIC ROOTS TO THE DELINEATION AND DEFINITION OF THE ROMANIAN NATIONAL STATE

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Abstract: *This study is dedicated to the 100th anniversary of the establishment of Romanian unitary national state, Great Romania, a much longer and complex process than it seems at first glance. Along with historical events, the geographic space and the population have played an essential role in the coagulation process of the Romanian national state. The merit of seizing and explaining these assets lies with great geopolitical-geographers such as Simion Mehedinți, Ion Conea (both were teachers at the Upper School of War, the "Carol I" NDU precursor), Nicolae Al. Rădulescu, Vintilă Mihăilescu, Victor Tufescu and so on. These alone or in collaboration with specialists in fields such as history (Nicolae Iorga, Gheorghe Brătianu, Constantin Daicoviciu), demography and statistics (Anton Golopenția, Sabin Mănuilă), sociology (Dimitrie Gusti, Mircea Vulcănescu – the latter being also a philosopher) have demonstrated the perfect logic of the constitution of the Romanian unitary national state. They also leaned on the essential natural components of the Romanian state, the well-known trio Carpathians - the Danube - the Black Sea, resuming the significant elements without which it would have been impossible to achieve the Great Romania.*

Keywords: *state, nation, nation-state, unitary national state, geopolitical games, essential natural components, the Carpathians, the Danube, the Black Sea.*

Introduction

The Romanian School of Geopolitics, with a broader development in the interwar period and a revival tendency nowadays, has a tradition regarding the theorizing of the concept of a—unitary nation-state and especially in the scientific argumentation of the *Romanian state*.

A series of geopolitical events that took place in a relatively short historical period – the Unification of the Romanian Counties (1859), the First World War and the events that occurred in 1918 (from the loss of the largest part of the country in February to the Greater Romania in December, the last one being acknowledged and officialized after the Peace Conference from Paris), the Second World War and the territorial raptures from 1940 – have all imposed this tendency on the Romanian geopolitical way of thinking. Therefore, the purpose of this study will be to analyze the main conceptual notions regarding the *Romanian unitary nation-state*, just as they were developed by the Romanian geographers, in the context of the major events that led towards the formation of a modern Romania, 100 years ago.

1. State, nation, state-nation, unitary state-nation

1.1. *The state*

The state was, for millenniums, the main actor on the world scene and for a very long time it was in fact the only actor. It wasn't until the second half of the 20th Century that things started to change and a series of military organizations (e.g. NATO, The Treaty of Warsaw, CENTO, Seato), economic (the European Union, MERCOSUR, NAFTA and so on) and some other groups (G8, G20, N11/Next Eleven, BRICS, Shanghai Cooperation Organisation etc.) joined the equation of geopolitical games.

There are several ways a state can be defined. On one hand, the simplest definition would be that the state is a political and territorial form of organization of the human society. On the other hand, a more sophisticated and explicit definition that was given by the British political scientist Murray Forsyth (2000) says that "the state, as a universal phenomenon, is a type of activity or enterprise that history presents to us as something that appeared because it was a human necessity. The common elements of this activity appears to be the following: (1) It can either form or shape a stable set of relationships, between certain people, along with their goods. This means unity or society is being built among people, hence the fundamental nature of the state constituency. (2) It requires an ordering power or some form of government or a relation of command and obedience between people. Society union performed by the state, thus it involves a hierarchy, even if it doesn't necessarily identifies itself with it. (3) The activity that creates and maintains the state is always exclusive, standing out in contrast to others who are not part of the community"¹. Murray Forsyth recognizes that such a definition of the state expresses only the minimal feature of the state as a type of human activity.

Recently a new tendency was shaped to define the state in a more restrictive and instrumental manner, then in the classical political theory. There are few who have come to see the state government as a simple device, a device which is distinguished for having a monopoly on constraints or, as the famous philosopher, sociologist and German economist Max Weber (1864-1920) stated "the monopoly on the legitimate use of force"².

In the reference Romanian work from the communist era, largely valuable overall, the focus was on social classes, a central element of the Marxist doctrine, who developed the theory of classes and class struggle as the engine of the historical development. All those definitions began with the crux political organizing of the dominant class..., organizational system of the dominant class..., political organization of the dominant class in the society... etc.

It was only after 1989 when we could discover definitions which gave up using specific phrases: "superstructure institution, main instrument of political and administrative organization, through which the functionality of the global social system is being exerted and human political relationships are regulated"³.

Since it is obvious that the state imposes a stable relationship between a community and its territory, we must also present some of the definitions given by geographers. According to Claudiu Giurcăneanu, "the state should be acknowledged as consisting of a territory with a specific surface, delineated by borders, inhabited by a number of people, subject to the leadership and governance of the common law"⁴.

In turn, Simion Mehedinți, the great geographer (also a geopolitician), offered the simplest but equally concrete definition: "What is a state? A portion of the surface of the

¹ Murray Forsyth, *Stat*, in "Enciclopedia Blackwell a gândirii politice", Ed. Humanitas, București, 2000, p. 697.

² Silviu Neguț, *Geopolitica*, Ed. Meteor Press, București, 2015, p. 534, (authors' translation).

³ ***, *Mic Dicționar Enciclopedic*, Ed. Enciclopedică, București, 2005, p. 1321, (authors' translation).

⁴ Claudiu Giurcăneanu, *Statele pe harta lumii*, Ed. Politică, București, 1983, p. 21, authors' translation.

Earth, which is closely connected to with part of the humanity and has life events different from its neighbours”⁵.

From a geopolitical standpoint, the essential quality of a state is its sovereignty, an inalienable and indivisible attribute, consisting of state supremacy within its borders and independence, in relations to other states. The concept of national sovereignty is, in fact, a cornerstone of contemporary international law, as stipulated by the UN Charter, adopted in 1945. Moreover, the famous theory of limited sovereignty, launched by the Soviet leader Leonid Brezhnev, is in dissonance with reference to the communist states⁶.

1.2. The nation

The most general definition tells us that a nation is “a human community characterized by territorial unity, historical and cultural identity consciousness, and in general, through a unity of language and religion”⁷. We can find a similar definition in a foreign reference; however, it is missing an important element, “the territorial unity”⁸.

Basically, there is a wide variety of definitions of the term nation. Not incidentally, one of the best analysts of the phenomenon, the economist and British political scientist, Walter Bagehot, said: “We know what it means, when we are not specifically asked, but we find it hard to define or explain the term”⁹. Some definitions are very restrictive (reducing the meaning of the term nation regarding the language or the population), others are much politicized, like the papers published in the Communist period.

In time, it began to manifest as an excessive exaltation of the superiority of one nation over others and it took a shape of national exclusiveness as compared to other nationalities, often taking manifestations of racism, chauvinism, and hegemonism.

The concept of nation became less emphasized during the Cold War, due to the interests of the two great powers, the Soviet Union and the US, and it came back into focus with the end of the Cold War and especially because of the fall of the communist European regimes and the dissolution of the Soviet Union and Yugoslavia, when suddenly, in Europe and Central Asia, came back into force the issues that allegedly have been resolved a long time ago as the independence of nations and territorial rivalries. It is more than obvious that in many cases, and particularly in the Balkans, the map of the states does not fully correspond with the map of the member nations, the latter being more complicated. “Today - says a great geopolitical analyst – the nation, became the most powerful idea in geopolitics. In fact, the power rivalries regarding the territory and the major geopolitical stakes, are no longer opposing the «East» and the «West», like it did for the past forty years, but, again, nation states against each other”¹⁰.

1.3. Nation state/Unitary nation-state

This concept became clearer in the late 18th Century, due to German Romanticism and the two Revolutions: American (1775-1783) and French (1789-1794). Nation-state was an expression of the unity between the nation itself and the territorial materialization, the state.

This type of state “replaced the two major forms of state developed during the Middle Age (...): The Dynastic state, focused on being loyal to the monarch's power and therefore respecting the power pyramid that required (...) and religion-state whose main focus was on

⁵ Simion Mehedinți, *Unirea Principatelor Române*, in the volume “Opere complete”, vol. I “Geographica”, Fundația Regală pentru Literatură și Artă, București, 1943, p. 81.

⁶ Silviu Neguț, *op. cit.*, p. 535.

⁷ ***, *Dicționarul Explicativ al Limbii Române*, Ed. Univers Enciclopedic Gold, București, 2009, p. 691, (authors' translation).

⁸ ***, *Le Dictionnaire de Notre Temps*, Ed. Hachette, Paris, 1988, p. 1029.

⁹ Walter Bagehot, *Physics and Politics*, London, 1887, pp. 20-21.

¹⁰ Yves Lacoste, *nation*, in “Dictionnaire de Géopolitique”, Ed. Flammarion, Paris, 1995, p. 1081.

faith-based communities, even if the basic collective identification at that time was religious, and not the ethnic one...”¹¹.

From a geopolitical perspective, the nation-state can be considered a state whose population mainly belongs to one nation. History gives us enough examples of the proliferation of nation-states after the dislocation/dismantling of empires, such as the Austro-Hungarian and Ottoman empires after World War I and later the Soviet Empire.

More interesting, is that conglomerate states that have both a federal and multinational structure, like Austro-Hungarian, Tsarist Russia/Soviet Union, Yugoslavia and others, would be referred to with the idea of a *great nation* by leaders and part of the population as well. It is precisely this *great nation* who went bankrupt whereas, on the other hand, each of these States are nations aside, for better or worse, have triumphed, representing the nation-states¹². The best and the most recent example is the case of Yugoslavia.

It's only natural to ask: what is today the nation-state? According to the same author, nowadays, “the term nation-state has acquired another meaning, which, in geopolitical terms, is very important. A nation-state can be perceived as a type of state whose population, if not entirely then most of it, consider itself as to be part of one and the same nation and state support, regardless of the government and even if there is a conflict with other states”¹³.

In support of the definition above state-nation equals nation-*state*. In this context, it's hard to understand the attitude towards Romania, coming from some of the neighbors and the minorities (from inside the country), well represented in the Parliament, whom are questioning the status of a unitary nation-state, while at the last two censuses, *Romanian ethnics had a fair share of around 90%* (89.4% in 2002¹⁴ and 88.6% in 2011¹⁵). What is the situation for the surroundings of Romania, are they called «multinational states», as our country is being labeled? In Hungary, the Hungarian ethnics hold 85.6%, in the Republic of Moldova, 75.8% Moldovan/Romanian, in Ukraine, Ukrainians 78.1%, Bulgaria, 85% Bulgarians, in Serbia, 83.3% Serbs and so on. Major European countries such as France, have 89% French and Germany has around 91.5% Germans.

2. The nation-state or the geopolitics of the nation, in the studies of the Romanian geographers-geopoliticians

Given the global and European context of time, geographers-geopoliticians, led by *Simion Mehedinți* (1868-1962), focused, naturally, on the issue of the *nation-state* in relation to its surroundings, while streamlining geopolitical pressure centers. Mehedinți, for example, outlined his conception in several studies, i.e. *The Oriental Issue, from a geographic and ethnographic point of view* (1914), reprinted study, in the years that followed World War II, under the title *Romania on the edge of the continent. A Romanian and European geopolitical Issue* (1940), *Qu'est-ce que la Transylvanie?* (1940), etc.

Mehedinți reported, that since the late 19th Century, some foreign geographers signaled the mismatch of Romania from before the unification in relation to the three essential coordinates (the Carpathians, the Danube and the Black Sea). For example, he cites the

¹¹ Oleg Serebrian, *Stat-națiune*, in „Dicționar de geopolitică”, Ed. Polirom, Iași, 2006, pp. 266-267, (authors' translation).

¹² Silviu Neguț, *op. cit.*, p. 547.

¹³ Yves Lacoste, *op. cit.*, p. 588.

¹⁴ *Structura etno-demografică pe arii geografice*, Centrul de resurse pentru diversitate etno-culturală, available online at: <http://www.edrc.ro/recensamant.jsp?language=0>, accessed on November 01.2018.

¹⁵ *Press release February 2, 2012 on the provisional results of the 2011 Population and Housing Census*, Central Population and Housing Census Commission, p. 5, available online at: <http://www.insse.ro/cms/files/statistici/comunicate/alte/2012/Comunicat%20DATE%20PROVIZORII%20RPL%202011e.pdf>, accessed on September 01.2018.

authors of *Atlas de géographie moderne* (F. Schrader, F. Prudent E. Anthoine, Paris, 1891), whom recorded “unnatural form of the Romanian state”, saying: “Romania is a land whose center, which we call the geographical center, by analogy with the center of gravity, «falls» outside the territory that the historical events have defined; in other words, Romania as it exists now is giving the impression of a country being in an unstable geographical balance”¹⁶. And Simion Mehedinți concludes: “Examining the Transylvanian plateau and the Carpathian arch that surrounds it like a city wall, the geographer is struck by the fragmented appearance of the Romanian State, whose configuration gives the impression of a breakthrough”¹⁷.

After outlining the geological, morphological, hydrographic and biogeographic elements, that come to support the previous claim, Mehedinți concludes bluntly: “It was impossible for this panel, composed with so many consistent elements, appropriate to characterize a geographical individuality, not to suggest to geographers, historians and statesmen the idea of a geopolitical unification, in this part of the world (author’s translation)”¹⁸.

Furthemore, German geographers expressed their thoughts about the unorganic shape of Romania before 1918, (i.e. Theobald Fischer, “«in a book published long before World War, he compared the map of the Romanian State with a flying eagle, that was missing his body, but after later historical circumstances, the eagle was given his body, his truly organic body». This was said to be, a revenge of geography on the history”¹⁹.

In another study conducted by Simion Mehedinți published 75 years ago ago, the great Romanian geographer, brings into focus an element, to support the ideas mentioned above: “Romanian language researchers have noticed a curious fact: our people left traces of their life on an exceptionally large geographical area. The toponomy and ethnography show evidence of the Romanian lifestyle”²⁰ and, it mentions that these kinds of evidence can be found all the way to Moravia, Istria, Thessaloniki, Rodopi, to the steppes near the Black Sea, Crimeea, Caucasus, and the Aralo-Caspian steppes.

In the same year, the same author, Mehedinți, brings other elements of support: “(...) the formation of current Romanian brings back memories with the outline of Dacia Traiana province. This coincidence is not an accident. The round shape of the ancient Dacia was not linked only to the circular shape of the mountain fortress from inside or because of the river (the Tisa, Danube, the Sea and Nistru), but also to a block of population, about whom Herodot said, it was the most considerably, from across the entire Europe and the only one who could compare to that of India”²¹. Later, he would claim through another representative work: “If the persistence of the Romanian race had, among others, the existence of an ethnically homogeneous block itself, this homogeneity is due to the advantages of an exceptionally favorable geographical environment”²².

Also, Mehedinți expresses in a synthetic and plastic manner, the drama of the Romanian people, starting from the Middle Ages, when Western Europe was marked by the Renaissance: “So, while the continental cities flourished and villages strengthen, the people that were linked to the Carpathians and the Lower Danube had to bear the concentric pressure of three Mongolian nations: Hungarians from the West, Tatars from the South and Turks from

¹⁶ F. Schrader, F. Prudent, E. Anthoine, *Atlas de géographie moderne*, Librairie Hachette et Cie, Paris, 1891, p. 36.

¹⁷ Simion Mehedinți, *Le pays et le peuple roumain. Considérations de géographie physique et de géographie humaine*, 2^e édition, Bucarest, 1930, p. 25, (authors’ translation).

¹⁸ *Ibidem*, p. 26.

¹⁹ Ion Conea, “Scurtă mărturisire a României”, *Revista Fundațiilor Regale*, nr.3/1943, Anul X, 1 martie, p. 627.

²⁰ Simion Mehedinți, *Dacia Pontică și Dacia Carpatică. Observări antropogeografice*, 1928, in “Opere complete”, vol. I *Geographica*, Fundația Regală pentru Literatură și Artă, București, 1943, p. 109.

²¹ *Idem*, *Cadrul antropogeografic. Observări relative la Transilvania*, in “Opere complete”, 1943, p. 122, (authors’ translation).

²² *Ibidem*, (authors’ translation).

the South East. Instead of «revival» they had to dispel their powers whilst resisting to the Asian encirclement. We can say that even after the end of the barbarian age, the Romanian people *lived under siege* until the 19th Century”²³.

Other Romanian geographers-geopoliticians had their focus on the whole unit between the Romanian land and its people. It is particularly significant, in this respect, the last volume (61) of the Bulletin of the Romanian Royal Society of Geography (published separately in the booklet entitled *The unity and the functions of the territory and the Romanian people*), comprising four communications (publicly supported during the General Assembly of the society from July 20, 1942, in the presence of King Michael I) written by important personalities: Constantin Brătescu (*Physical Unit*), Nicolae Al. Radulescu (*Anthropogeography Unit*), Victor Tufescu (*Economic Functions*) and Vintila Mihailescu (*Geopolitical Functions*).

Here is a relevant consideration, from Nicolae Al. Radulescu (1905-1989): “From an Anthropogeographic point of view, Romania is a perfect unit, which resulted from an ideal combination of areas representative for Romanian forms of life, which are found in concentric circles just like the rings of land built upon. Transylvania remains in the middle, as a center of gravity, in which all human manifestations of antropogeography are more intense, more original, yet older; centers that radiate influence towards all the cardinal points, as a magnetic power meant to polarize all the Romanian provinces around the Carpathian citadel.

And of course, all this objective scientific analysis can only lead to the conclusion that the edge of the Romanian nation is until where Romanian life forms extends”²⁴.

In his turn, *Vintilă Mihăilescu* (1890-1978), in an older study named *The Romanian Carpathian block*, said: “In respect to the historical and geographical truth, we must consider that the current Romanian Carpathian block, the pericarpatic region and the Danube valley, are not the result of a late expansion of the Wallachian tribes, secretly arrived in the Balkans – as the Hungarian scientists like to assert, without evidence and without a blink - but a leftover, with high importance regarding its number and scope of vital space, from a native wide Romanian and preRomanian area, extended from Pannonia to Dnieper and from the Carpathian area to the Galician piedmont, to Pind and the Aegean Sea (author’s translation)”²⁵. The study was accompanied by the *Romania's ethnic map*, drawn up based on the data provided by the 1930 Census.

He also said in a paper published five years earlier (reprinted 33 years later), that “Rightfully, we can say, that the geographical specificity of the area of European crossroad exists, before anything, because of the Carpathians, which impregnated unity on the three differently oriented facades: towards the Pannonian Plain, the Balkans and towards the east of the continent”²⁶.

The geographer that focused most on geopolitics, *Ion Conea* (1902-1974), talked about all aspects concerning Romania, including those relating to the national state, with significant titles: *The current Romanian borders: the victory of Geography on History* (BSRRG, LVII, 1938), *Transylvania, the heart of the territory and the Romanian state* (“*Geopolitics and Geohistory*» magazine, Year I, no. 1), *The Carpathians, natural border and «Tota Transylvania ad nos venit” or How much is the theory of Iancsó Benedek worth* (in “*Geopolitics and*

²³ Simion Mehedinți, *Frunteria României spre răsărit*, in “Revista Fundațiilor Regale”, nr. 8-9/1941, Anul VIII, p. 252, (authors’ translation).

²⁴ Nicolae Al. Rădulescu, *Unitatea antropogeografică a României*, in vol. “Unitatea și funcțiunile pământului și poporului românesc”, Tiparul “Cartea românească”, București, 1943, p. 48, (authors’ translation).

²⁵ Vintilă Mihăilescu, “Blocul carpatic românesc”, *Buletinul Societății Regale Române de Geografie*, tomul LX/1942, pp. 9-10.

²⁶ *Idem*, *Geografia fizică a României*, Ed. Științifică, București, 1969, p. 8, (authors’ translation).

Geohistory" Year II, no. 1), *A geopolitical position* (in "Geopolitics and Geohistory" Year III, no. 1), and so on.

First thing's first, hence we will return along the way, we want to remember two things of reference to him:

a) A very famous geopolitical phrase «the grand chessboard», attributed to the American contemporary analyst, Zbigniew Brzezinski²⁷, which spread around the world, has been used by our compatriot, three quarters of a century ago: "the political face of the earth is like a huge chessboard (emphasis added by us) where players always moving parts, giving their time, all other positions and functions"²⁸. Exactly what the contemporary American says!

b) An advocate of the idea that, unlike Political Geography, Geopolitics is *predictive*, he notes and says incredible things for that period (1944): "Europe and the world nowadays, are living in the eve of a new order of things. New forms of political and economic life are being prepared, which will take on the world of tomorrow. The first word, as soon as these shapes will gain precise shape and potency, will belong to the «Great Powers». But small states are no less obliged to prepare for understanding them: willing or not, these countries will integrate in the world of tomorrow, with specific purposes and functions. Whoever will be caught unprepared, shall stay away, humiliated, looking confused towards a world, in which he will have to live, without but an assignment and responsibility, worthy of what he could still provide. (...) And we, due to the place that we hold on the map, by decision of the Great Geographer [what a plastic expression! - our note], we are among the foremost that have a duty to be baptized to understand the world there is to come: for most of our own service, but also - on the contrary - for most of our distress"²⁹.

3. The Danube and the Black Sea

Naturally, both Simion Mehedinți and the other Romanian geopolitical-geographer introduce the Danube and the Black Sea into the equation. Thus, in a conference, Mehedinți said: "The life of our people had and still has, two coordinates: on one side Mountains and forrests, on the other side the Danube and the Sea. Whoever says the Danube must also say the Black Sea. But not only: the Bosphorus (which is but a prolongation of the Danube) must be added, then The Dardanel - a continuation of the Bosphorus (...). The Danube can not and must not be separated, for a moment, from the Black Sea and from the straits (the authors underlining), with which it forms a «fundamental coordinate» for the past and future destinies of our people"³⁰.

We all know that Romania hasn't always held an exit to the Black Sea. Furthermore, we should notice the intuition of Simion Mehedinți, but also of the other geopolitical geographers, as we shall see, who have noticed that the Danube has overcome this handicap in certain historical periods. Mehedinți states: "The territorial integrity of the Romanian State in the 19th Century and beginning of 20th Century was largely determined by the Danube"³¹. And he continues with a rhetorical question: "Is it true or not that, from 1829 to 1918, for 90 years, the rebuilding of the Romanian territory has been in close connection with the Danube and the Black Sea, adding, at the decisive moment, the Mountains as well, the other great coordinated

²⁷ Zbigniew Brzezinski, *Marea tablă de șah. Geopolitica lumilor secolului XXI*, Ed. Univers Enciclopedic, București, 2000.

²⁸ Ion Conea, "O poziție geopolitică", *Geopolitica și Geoistoria*, nr. 1/1944, Anul III, Societatea Română de Statistică, București, p. 98, (authors translation).

²⁹ *Ibidem*, pp. 86-87, (authors' translation).

³⁰ Simion Mehedinți, *Legăturile noastre cu Dunărea și Marea*, conferință pentru Liga Navală, 1938, publicată în „Opere complete”, *op. cit.*, p. 150, (authors' translation).

³¹ *Ibidem*, p. 152, (authors translation).

of the life of the Romanian people?”³². Then he makes a very suggestive statement: “The enlightened periods of the Carpathian people and the surrounding regions were when the east sea was free and shared of all the fruits of Mediterranean civilization. On the contrary, when the Black Sea darkened, the shadow was spread over the life of the people, linked to the Carpathian system”³³.

It is well-known that the Black Sea has always had strategic strengths, which has attracted the interest of the great powers: first the Greeks and the Romans, then the Byzantines, the Ottomans and the Russians, and later some Western powers (Great Britain, France, Italy/Kingdom of Sardinia).

“The Black Sea has always been an essential link on the axe of the seas (Caspian Sea - Black Sea - Mediterranean Sea), contributing (...) to the configuration and reconfiguration of regional geopolitical systems: sedentary people versus nomads in the prehistoric era and dawn of Antiquity, Greek-Roman equation from the Antiquity, Turkish-Byzantine, then Ottoman in the Middle Ages, Russian-Ottoman, Western Sovietic (NATO) during the communist period, the current regional configuration becoming even more complicating (...); its geographical positioning on the edge of the European continent, and at the same time at the end of the «Silk Road» (...), giving the Pontus the role of a *genuine geopolitical Eurasian pivot*”³⁴.

In a study named *Dunăriți – Dunăreni*, calling this way “all the Romanians bound to the Danube, where the Danube passes through the Carpathians - as we would say «the people of the Danube» or of the Danubian lands”. Mehedinți makes an incursion in time, pointing out the attraction of the great river for the great rulers in Antiquity (...) and to the modern times, and finding that: “The 19th Century was, at a glance, just like a sunrise. The scribes named it the «century of nationalities». The Danube has been crossed by so many ships that it has been elevated to the rank of «the 8th sea» of Europe (author’s translation)”³⁵. He concludes: “Those who are bound to the Danube either all escape, or they all lose”³⁶.

Simion Mehedinți resumed the theme of the Danube as a geopolitical factor in a study, also very significant, called *Romania’s Frontiers towards the East*, and published in 1941³⁷. Among other things, it highlights the fact that the great river, the Carpathian-Balkan valley which was originally entirely of Dacia, became first *frontier* (border) at the beginning of the first millennium of our era: “In the first century of the Christian era, after the conquest of Gaul, three quarters of Rome’s legions sat on the right bank of the Lower Danube, in front of Dacia, and a Roman fleet patrols the river from the sea to the Iron Gates”³⁸.

In the same year, 1941, a disciple of Mehedinți, Nicolae Al. Rădulescu also addresses the problem of the great river, considering that “for Romania, the Danube had 3 roles: road, frontier and element of political polarization”³⁹. Regarding this last element, he states: “Wallachia and Moldavia after they started the foundations, reached in the shortest time and took possession of the Danube, which was calling them along with the waters of the rivers as the spikes of the mountain descend from the mountains. And later, the territorial integration of

³² *Ibidem*, p. 158, (authors translation).

³³ *Ibidem*, p. 159, (authors’ translation).

³⁴ Marius-Cristian Neacșu, Silviu Neaguț, “Black Sea Area – A New «Grey Area»?”, *Strategic Impact*, no. 2/2013, vol. 47, p. 39, (authors’ translation).

³⁵ Simion Mehedinți, *Dunăriți – Dunăreni*, in “Opere complete”, *op. cit.*, 1943, p. 183.

³⁶ *Ibidem*, p. 185, (authors’ translation).

³⁷ Simion Mehedinți, *Frunta României spre Răsărit*, in E.I. Emandi, Gh. Buzatu, V. Cucu (1994), *Geopolitica*, vol. I, Ed. “Glasul Bucovinei”, Iași, pp. 128-146.

³⁸ *Ibidem*, p. 128, (authors’ translation).

³⁹ Nicolae Al. Rădulescu, “Hotarul românesc dunărean”, *Revista Română de Geografie*, nr. 1/1941, vol. IV, pp. 3-7, (authors’ translation).

the Romanian State, in the 19th Century and beginning of the 20th Century was largely determined by the Danube”⁴⁰.

Eventually, he appreciates “the bright image of our Danube (...), this geopolitical coordinate of our State (our emphasis), a polarization element of the Romanian State, a road of economic prosperity for the whole Europe; of this Danubian border that keeps the character of all our borders: a non-ethnic political edge”⁴¹.

We all know that, after the Roman rule, what Mehedinți called the “troubled period of the Middle Ages”, stressing that “for a thousand years, the Dacian-Roman population had to suffer from the neighborhood of so many nation-leeches”. Mehedinți continues: “(...) even after the end of the Barbarian era, the Romanian people lived undersieged until the 19th Century. (...) It is surprising that in this state of chronic siege, the Romanian people managed to reconstitute for a short while under Mihai Viteazul the old unity of Dacia's Traian”⁴². And “finally, there was a new resurrection - that of the nineteenth century. As a conclusion, in 1918, a round Romania as an ancient Dacia emerged on the map. (...) Thus, the Carpathian Fortress sits on the delta and both sides of the «Danube Marine», watching the mouths of the river, facilitating the movement on the diagonal Rhine - Danube - Bosfor - Suez, a sort of carotid world trade”⁴³.

After all these assessments, he draws a purely geopolitical conclusion: “Therefore, it is not a glory if we consider the Eastern edge of Romania, being the area extending from Cernăuți quadrilateral, Hotin, Reni and the Cetatea Alba, as an interesting region not only for the Romanian state, but also from a geopolitical point of view (...). Anyone can see that from Darius Histaspes to Traian, from the Goths who went all the way to Isaccea, to the Genoese seated in Chilia and the Cetatea Alba; and from the crusaders coming from the bottom of Europe to Nicopolis and Varna; finally, until the establishment of the «European Commission» for the maritime section of the river and ... to the recent claim of Soviet Russia to eliminate the Western powers from this commission, the thread of the universal history been linked again and again to this corner of the earth where planetary interests are crossing”⁴⁴. «And he goes on: “The Dniester is, in the east of Europe, the river flowing through a country inhabited mostly by Romanians, meaning that it is a Romanian river” (and refers to Constantin Brătescu, Eastern lands, the Dnieste valley, Craiova, 1941)»⁴⁵.

The same Simion Mehedinți makes a finding that many analysts missed: “What no one could suspect (not even the most mischievous Pan-Slavists) was something else: that on the threshold of the 20th Century, imperialist dreams like that of Gengiskhan and «The Testament of Peter» regarding Byzantium will constitute the program of a proletarian dictatorship called Bolshevism! This revelation only arose at the end of the World War I. While Wilson and others of his own kind were thinking of establishing eternal peace based on the international Hague Court and arbitration rules set up in Geneva, Lenin responded with an unprecedented formula: «Permanent War» to all peoples who wouldn't adopt the Communist regime. Thus, the fanaticism of the Qur'an had been overcome”⁴⁶.

Regarding the natural, historical and geopolitical premises of the *Romanian national state*, we return to the work of Mehedinți *Le pays et le peuple roumain*, from which we extract some extremely significant quotes: “In fact, historians remember that in the time of Burebista and Decebal, the political frontiers of Dacia included the whole territory between Tisa, the

⁴⁰ *Ibidem*.

⁴¹ *Ibidem*, p. 6.

⁴² Simion Mehedinți, *op. cit.*, in E.I. Emandi, Gh. Buzatu, V. Cucu (1994), *op. cit.*, p. 130, (authors' translation).

⁴³ *Ibidem*, (authors' translation).

⁴⁴ *Ibidem*, p. 131, (authors' translation).

⁴⁵ *Ibidem*, (authors' translation).

⁴⁶ *Ibidem*, (authors' translation).

Danube, the Dniester and the sea, and even stretched beyond these limits. Traian's Dacia preserved, as such, the same roundness as an aspect"⁴⁷. After other significant allegations, among which, one concerning the Romanians whom in the Middle Ages had territories «beyond» (thus beyond the Carpathians), Mehedinți signaled an essential but neglected thing, namely that “the Hungarians themselves, these uncomfortable neighbors of the West, felt how the unification of the countries inhabited by Romanians was a natural thing. Prince Gabriel Bethlen (1613-1629), though Hungarian, expected the reconstruction of the ancient Dacia, initiating the union under its scepter of Transylvania, Moldavia and Walachia”⁴⁸. And, Mehedinți mentions, to Bethlen, “this territorial and ethnical unification seemed so natural that he struggled to set up schools for the Romanians, the dominant element as numbers, and to translate the Bible into their own language”⁴⁹.

Next comes a series of appraisals regarding the “*orographic unit, the ethnic and political unity*” among which: “The Carpathian bastion was, from antiquity to the present day, the center of attraction around which the borders of a state were settled according to this group of mountains” and that “Romania, situated on the diagonal of the largest agglomerations of population and on the most direct and less expensive lines of navigation, aviation, railways and wireless telephony, is in a most favorable situation from a geo-economic point of view”⁵⁰.

Very important is the final conclusion (noteworthy, more than eight decades ago): “For the moment, Romania's role is clear: just as in the Antiquity, Dacia was the extreme province of the Roman Empire in the East, that same way, in our time, Romania, by its position at the mouth of the Danube, is a sort of European sentinel, meant to ensure, according to its powers, the relations between the European West and the Asian world, on the diagonal line of the highest population density on the planet”⁵¹. According to Mehedinți, this diagonal “which marks the most populated region of Eurasia, starts from the British Archipelago, passes through the basins of the Rhine and the Danube, to end up in the plains of the Euphrates, the Indus and the Ganges”⁵².

4. Transylvania

No other specialist, regardless of the field of expertise, has ever showed so convincingly, like Simion Mehedinți, the place and role of Transylvania⁵³ in the construction of the Romanian state, which it considers «the seed of the whole country» and gives the details to demonstrate that it is: *the orographic center of the Romanian territory; the center of Romania's river system; ethnographic, historical and anthropogeographical center the Romanian people; center of the region with Dacian climate.*

The last chapter of his work was called, no more and no less than *Ethnographic and Geopolitical Conclusion (emphasis added)*: “From an *orographic, climatic and hydrographic, anthropogeographic, prehistoric, historic and ethnographic* point of view, she is the seed of the Romanian State; and the Romanian people, surrounded by Slavic-Mongolian peoples, accomplishes, by being located at the diagonal Rhine – Danube, *a load of geopolitical interest*

⁴⁷ Simion Mehedinți, *op. cit.*, 1930, p. 26, (authors' translation).

⁴⁸ *Ibidem*, pp. 26-27, (authors' translation).

⁴⁹ *Ibidem*, (authors' translation).

⁵⁰ *Ibidem*, (authors' translation).

⁵¹ *Ibidem*, p. 131, (authors' translation).

⁵² *Ibidem*, p. 119, (authors' translation).

⁵³ Simion Mehedinți, “Ce este Transilvania?”, *Revista Istorică Română*, august 1943, Imprimeria Națională, București, pp. 5-84.

(*emphasis added*), ensuring free movement through the mouths of the most important European river”⁵⁴.

As a first conclusion he states: “In Antiquity, the Carpathian family became famous through these qualities (presented throughout the paper - our note), through constancy (montibus inhaerent) through faith in immortality (Herodotus uses the epithet «immortal») and through idealism. Zamolxes doctrine affirms the primacy of the soul: only people with a clean soul, can maintain a health body. Following this principle, and admired by the wise Socrates, and their faith in immortality, the people from Dacia went to war with their greatest courage (ad mortem paratissimi)”⁵⁵.

Also, he thinks that the doctrine of Zamolxe, regarding the primacy of the soul, has had another consequence: “some of the people from Dacia, led a very beautiful life (Capnobații) leaning toward asceticism, an unknown phenomenon in the Mediterranean countries and, much less, to the barbarians of the northern Europe”⁵⁶. Also, he draws a very interesting conclusion: “The people of the Carpathians appeared more prepared than others to receive the gospel. We could say that the people of Dacia were «almost Christians before Christianity» (*emphasis added*). A new doctrine spread more easily here, and when the legions withdrew (271 AD), in addition to the Latin language and legal traditions of the Romans, religion (*emphasis added*) was left to support the people of the Carpathians”⁵⁷.

In turn, *Ion Conea*, the geographer who leaned most on geopolitics and who made a debt of honor to defending the Romanian autochthony, published only a year after Mehedinți, a study entitled, very categorically, *Transylvania, heart of the earth and the Romanian state* (in “Geopolitics and Geohistory” magazine, whose co-founder he was), that invokes arguments from the historical geography, history, ethnography, linguistics and toponymy, which were so familiar to him. He concludes very bluntly: “Every state, says Kjellen, aims to cover an organic geographical area at its whole. The Middle Danube Basin is such a region, but our Hungarian neighbors can not claim it in its entirety, for a Hungarian state: they are just a modest little ethnic island that will get lost in this large basin. (...) And Transylvania is doomed ever since the beginning of the world to be the core of the country, as we see it in Great Romania - and not a part of the edge, secondary, as it was - and would be in a Great Hungary”⁵⁸.

In the next issue of the above-mentioned magazine, Ion Conea published a controversial study relating to the theory of the Hungarian historian Iancsó Benedek, according to whom, the preponderance of the Romanians in Transylvania was explained by the massive immigration from the Romanian Counties, from the 17th and especially 18th Century. Basically, he shows that “in general, throughout the Romanian history, the hive country, the country with ethnic swarming around, was Transylvania, along with its belt of mountains, hills and valleys. It has always been like this, since Antiquity to recent days, and mostly in the Middle Ages. (...) It wasn’t until the 17th and 18th Centuries, the same time that Iancsó Benedek exposes the strange theory about contrary immigration, that a flow of Transylvanian people, was ascertained in the Counties, stronger than in any previous century”⁵⁹.

We conclude this study with a call to all the people of Romania by Simion Mehedinți, 100 years ago (only four years after the Great Union):

⁵⁴ *Ibidem*, pp. 82-83, (authors’ translation).

⁵⁵ *Ibidem*, p. 71, (authors’ translation).

⁵⁶ *Ibidem*, p. 72, (authors’ translation).

⁵⁷ *Ibidem*, (authors’ translation).

⁵⁸ Ion Conea, “Transilvania, inimă a pământului și statului românesc”, *Geopolitica și Geoistoria*, nr. 1/1941, Anul I, Societatea Română de Statistică, București, p. 18, (authors’ translation).

⁵⁹ *Idem*, “«Tota Transilvania ad nos venit» sau Cât valorează teoria Iancsó Benedek”, *Geopolitica și Geoistoria*, nr.1/1942, Anul II, Societatea Română de Statistică, București, p. 15, (authors’ translation).

“Romanians, only recently united with the mother country, must know as much as possible the geographical unit, ethnographic, economic and political region from around the Carpathian mountain; and the foreign nations located on this land should also take note of this unit, which the Russian, German and Hungarian programs hid until now. Therefore, the study of Romania should acquire a special place and, best suited for the children's development, we need to go back several times to the research of land and the Romanian people”⁶⁰.

Conclusions

The state was for millennia the main actor on the world stage, and starting from the second half of the 20th Century, other entities were added to the geopolitical games. In modern times, the unity between *state* and *nation* (a human community characterized by territorial unit, history, culture, language, religion, etc.) gave birth to the *nation-state* (in which, if not entire then at least most of the population, belong to the same nation), with its unitary national state.

After analyzing the studies that have been allocated to Romania, as a unitary national state, in the Romanian School of Geopolitics - only from the perspective of the geographers' contribution - in the context of the major events from the early 20th Century, whose centenary we celebrate this year, the following conclusions came up:

Both Simion Mehedinți, founder of Romanian geography, as well as the Romanian geographers who worked in the early 20th Century and especially in the interwar period, had significant geopolitical concerns, individualizing with time, a real school of thinking in the field, making a significant contribution to the scientific fundamenting for building a modern Romania, along with historians, sociologists, demographers, statisticians and so on. Moreover, Ion Conea, tried and succeeded in showing, despite the interdisciplinary nature, that geopolitics has a geographical basis.

Also, Ion Conea, rightly considered one of the founders of the Romanian School of Geopolitics, founded (with Gheorghe Bratianu Sabin Mănuilă, Mircea Vulcănescu and Anton Golopenția) the magazine “Geopolitics and Geohistory” – which had, unfortunately, due to the historical and political context, only three published volumes (in 1941, 1942 and 1944) – with a suggestive subtitle “Romanian Magazine for Southeastern Europe”, which clearly delineate the thematic area and the intentions of the editorial board.

The vision of the Romanian School of Geopolitics: an analysis of global and regional power game from a Carpathian-Danubian-Pontic perspective. Just like Mehedinți settled the line of thinking - and Iorga was making universal history starting from rivers or seas – the Romanian geopoliticians-geographers were analyzing what is happening on the Eurasian stage from a local Romanian perspective.

Moreover, they were interconnected to the flow of great ideas and Western scientific currents - Ion Conea, for example, would cite in original, in German, French, English, Italian - notions and concepts, that were not taken as such and on which they had their own perspective with an understanding and appliance according to the Romanian space. Relevant examples in this context are: *Romania's geopolitical position* – a much debated subject in the studies of the Romanian School of Geopolitics - or the *essentialism* of the Romanian territory, proven with theories and concepts developed in the West.

A constant concern in the Romanian geopolitical studies was Romania, as national state. Thus, different subjects were addressed, like: the shape of the Romanian territory, the geopolitical position of Romania and its belonging to Central Europe, the frontiers of our country (*frontlets* in Simion Mehedinți), the organic character of the Romanian territory and

⁶⁰ Simion Mehedinți, “Congresul de Geografie din Brașov, 20-29 iulie 1922”, *Buletinul Societății Regale Române de Geografie*, 1922, tom XLI, pp. 215-216, (authors' translation).

the perfect overlapping of the ethnic base, fundamental geographical units for building the Romanian state: the Carpathians, the Danube and the Black Sea.

Transylvania, a Romanian "heartland". Ion Conea was the one who supported the *heartland* role (*geographical pivot of history*, as the British geographer Halford Mackinder described him) of Transylvania ("heart of the earth and the Romanian state" for Conea) and its importance in achieving modern Romania. In this respect, he used arguments that ranged from geology and physical geography to the human (economic geography, toponymy, historical geography, cultural etc.), making numerous applications in the field, resulting in the particularly valuable toponyms or ethnic maps

The Romanian School of Geopolitics leaned forward, to a limited extent, of course, upon the regional and global power games (Eurasian). A proof of this is the terminology used, especially by Conea, we can find among the phrases he used expressions such as "checkerboard" (used by him, with more than three quarters of a century, before the American analyst Zbigniew Brzezinski, whom it was attributed to), "great powers" and so on; or the highly specific analysis, and also prospective, of Russia, made by Simion Mehedinți.

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ALTERNATIVE NATIONAL DEFENCE AND SECURITY STRUCTURES DURING THE COLD WAR PERIOD. CASE STUDY – ROMANIA AND THE BALKANS

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Abstract: *The paper presents the alternative national defence and security structures, be they considered public security organisations, official governmental paramilitary structures or militias, existing in some countries during the Cold War period, focusing on the situation in Romania and the Balkans. The presentation is contextualised, taking into account the tensions between the Eastern Bloc (the Soviet Union and its satellite states) and the Western Bloc (the United States of America and its allies), divided along ideological lines after the end of the World War II, the existence of the two main political-military alliances (the Warsaw Pact and NATO), as well as the main crises and phases in the Cold War, in general, and in the Warsaw Pact, in particular. In the mentioned context, in some countries, certain structures other than the regular military were established to provide additional defence in the event of outside attack, the emergence, organisation and role of the ones related to the Eastern Bloc, especially those in Romania and the Balkans, being presented in the paper.*

Keywords: *patriotic guards, people's militias, combat groups of the working class.*

Introduction

The World War II in Europe ended with the unconditional surrender of Germany. On 8 May 1945, Winston Churchill officially announced it: "God bless you all. This is your victory! It is the victory of the cause of freedom in every land. (...) I say that in the long years to come not only will the people of this island (Great Britain A.N.) but of the world, wherever the bird of freedom chirps in human hearts, look back to what we've done and they will say <do not despair, do not yield to violence and tyranny, march straightforward and die if need be-unconquered> (...). Tomorrow our great Russian allies will also be celebrating victory and after that we must begin the task of rebuilding our health and homes, doing our utmost to make this country a land in which all have a chance, in which all have a duty, and we must turn ourselves to fulfil our duty to our own countrymen, and to our gallant allies of the United States (...). We will go hand and hand with them"¹. However, the allies during the war did not manage to remain united after the war, for various reasons, which are well-known

¹ *Winston Churchill address to the crowds gathered in Whitehall, May 08, 1945, available online at: <https://www.ibtimes.co.uk/winston-churchills-1945-victory-europe-day-speech-full-1500190>, accessed on September 22, 2018.*

now, one of them being represented by different ideologies and world views. Therefore, a year later, on 5 March 1946, the same Winston Churchill stated, in one of the most famous speeches throughout history, that: “A shadow has fallen upon the scenes so lately lighted by the Allied victory. Nobody knows what Soviet Russia and its Communist international organisation intends to do in the immediate future, or what are the limits, if any, to their expansive and proselytising tendencies. I have a strong admiration and regard for the valiant Russian people and for my wartime comrade, Marshal Stalin. (...) We understand the Russian need to be secure on her western frontiers by the removal of all possibility of German aggression. (...) It is my duty however, for I am sure you would wish me to state the facts as I see them to you, to place before you certain facts about the present position in Europe. From Stettin in the Baltic to Trieste in the Adriatic, an iron curtain has descended across the Continent. Behind that line lie all the capitals of the ancient states of Central and Eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia, (...) and all are subject in one form or another, not only to Soviet influence but to a very high and, in many cases, increasing measure of control from Moscow”².

The so-called Iron Curtain generated what was to be known in history as the Cold War, with its two blocs – the Western one (the United States of America and its allies), and the Eastern one (the Soviet Union and its satellite states). Each of the two blocs has its political military organisation, namely the North Atlantic Treaty Organisation, established on 4 April 1949, and the Warsaw Treaty Organisation, established on 15 May 1955. Thus, the distribution of power in international relations led to what was known as the bipolar world, with its particular tensions, frictions and crises.

1. The Eastern bloc. Brief overview

Between 1945 and 1947, as it was highlighted by Churchill, in the famous cited speech, Central and Eastern Europe was confronted with a new geopolitical, social and economic reality, under the direct guidance of the Soviet Union, and based on the ideology of Marxism-Leninism. Therefore, the states in the area, which, for various and obvious reasons, could not be considered Soviet Republics, became the components of what was called the Soviet or Socialist or Communist Bloc. Most of those countries later became the Warsaw Pact member states – Albania, Bulgaria, Czechoslovakia, Hungary, Poland and Romania. Mention should be made that Albania used to be an USSR-aligned state up to 1960 and a Warsaw Pact member state up to 1968, when it officially retired from it. Moreover, the German Democratic Republic, which was established in 1949, in the Soviet Occupation Zone of Germany, officially recognised at the Potsdam Conference of July/August 1945, was also a Soviet satellite and a Warsaw Pact member state. The Federal People’s Republic of Yugoslavia, as it was renamed in 1946, was ruled by a communist government, but it remained a non-aligned country, mainly as a consequence of the Tito-Stalin Split in 1948.

As it has already been mentioned, the new reality was based on the Marxist-Leninist ideology, which was relatively new and pretty uncommon for many of the states in the region, even in those where there were established such ideology-related parties. That is why one of the most important challenges for the Soviet Union was to legitimise its power and influence, as well as to provide a catalyst for the legitimisation. “Stalin and local communist associates realised that the very presence of the Red Army (as well as the acquiescence of the West) guaranteed the communists a major voice in the various governments to be established. (...) Nonetheless, the local communists and Moscow realised that the situation was not free from

² Winston Churchill, *The Sinews of Peace, Iron Curtain Speech*, Westminster College, Fulton, Missouri, March 05, 1946, available online at: <https://winstonchurchill.org/resources/speeches/1946-1963-elder-statesman/the-sinews-of-peace/>, accessed on September 20, 2018.

complications. (...) Apart from the uncertain element of Big Power relations (...), it seemed that in East Europe itself, the situation was still not ripe for the duplication of Soviet experience³.

Therefore, briefly, Poland was the country that was occupied by the Soviet forces in 1945, the communists controlling it, as the administrative institutions were destroyed by the war, the country having a government in exile. Romania, Bulgaria and Hungary were considered former Axis powers. Hungary was near Austria. Romania and Bulgaria were still monarchies. In the context of imposing communist regimes, the main difference between the two countries was that the nationalist anti-Russian feelings were not so prominent in Bulgaria. The Third Republic of Czechoslovakia, established in 1945, aspiring to be a bridge between the East and the West, became a people's republic, following the coup d'état at the beginning of 1948. The situation was different in Yugoslavia, where the communist party won power using own resources, although the Red Army assisted it.

Stalin died in 1953 and the leader of the Soviet Union became Nikita Khrushchev. In the famous speech delivered in 1956, he denounced Stalin's crimes and the cult of personality, launching the idea of different paths to socialism⁴, the dynamic of power being reassessed in the Eastern Bloc. Actually, immediately after Stalin's death, civil unrest occurred in East Germany, started with a strike of the construction workers in East Berlin, which turned into protests against the communist government all over the country. The series of protests in the Eastern Bloc continued, especially after the so called de-Stalinization, marked by the mentioned speech in 1956. Thus, in Poland, the workers in Poznan demonstrated demanding better working conditions and expressing their interest in following a different path to socialism. As a result, the leader of the Polish government, Boleslaw Bierut, was replaced with Wladyslaw Gomulka, perceived as a reformist leader. The relative success achieved by the protesters in Poland inspired an almost similar uprising in Hungary. Students and workers protested against the communist regime in October 1956. Matyas Rakosi was replaced with Imre Nagy, perceived as reformist. The main difference from the protest in Poland was that the uprising in Hungary was resolved with the help of the Soviet tanks. Nevertheless, the most notorious protest was the one in Czechoslovakia, known as the Prague Spring, in August 1968. At that time, the leader of the USSR was Leonid Brezhnev. The pattern was almost the same, the conservative leader Antonin Novotny being replaced with the reformist Alexander Dubcek, in whose programme was mentioned the now notorious concept of *socialism with a human face*. The element of surprise was that the popular uprising was resolved by the armed intervention of the troops belonging to five Warsaw Pact member states – USSR, Bulgaria, Poland, East Germany and Hungary, being suppressed in an invasion, aspect that laid again emphasis on legitimacy and peaceful coexistence, as well as on the relationship between socialist internationalism, sovereignty and nationalism. Following the events, Brezhnev delivered a famous speech, before Polish workers, promoting the so-called *Brezhnev Doctrine* or the *Doctrine of Limited Sovereignty*⁵, having important consequences for the Eastern Bloc and not only, especially for Romania that, although a Warsaw Pact member state, refused to take part in the invasion. Another moment of crisis in the Eastern Block was that of 1980-1981, when the Solidarity Polish labour union protested against the authoritarian communist government in

³ Zbigniew K. Brzezinski, *The Soviet Bloc. Unity and Conflict*, revised and enlarged edition, Harvard University Press, UK, 1967, p. 23.

⁴ Nikita Khrushchev, *Speech to the 20th Congress of the CPSU*, 24-25 February 1956, Internet Marxism Archive, available online at: <https://www.marxists.org/archive/khrushchev/1956/02/24.htm>, accessed on September 22, 2018.

⁵ Leonid Brezhnev, *Speech before Polish Workers*, the 5th Congress of the Polish United Workers' Party, 13 November 1968, republished in L.S. Stavrianos, *The Epic of Man*, Englewood Cliffs, N.J. Prentice Hall, 1971, *Internet Modern History Sourcebook*, available online at: https://sourcebooks.fordham.edu/mod/1968_brezhnev.asp, accessed on September 23, 2018.

Poland. That time it was a consolidation of the protesters in a broad coalition of social forces that non-violently struggled against the ideological claims falsehood. The year 1989 marked the end of the reality shaped after WW II as well as of the bipolar world, protests occurring throughout the Eastern Bloc.

With regard to the armed forces of the countries in the Eastern Bloc and, following 1955, of the Warsaw Pact member states, regardless of their organisation, they all had some specific characteristics to meet the ideological requirement of Marxism-Leninism. Among them, the following can be mentioned: “armed forces of the working class” (...) “of the socialist state of the whole people” (...) “of the dictatorship of the proletariat” (...) “armies determined by social and historical laws”⁶, converging on the support of the armed forces for the new regimes, thus consisting of politically-reliable officers. Therefore, the postwar Soviet leadership developed a network of national armed forces in the Eastern Bloc, with the help of Soviet advisers. However, the question arises that the Soviet Union “either did not want or could not attain a collective socialist army. (...) Or did the Soviet leadership consider that national armies could better rally each nation to its new political leadership? (...) this process turned out to be the lead-in to the system of the WTO’s Joint Armed Forces, where national contingents remain under national command”⁷. In addition, although highly ideologically and politically committed, neither the national armed forces nor other official security organisations could be involved in certain activities intended to maintain the status quo, mainly considering their legal status as well as the other aspects related to control, stability, legitimacy and popular support. Thus, alternative national defence and security structures, be they public security organisations, official governmental paramilitary structures or militias, were established in many countries in the Eastern Bloc when the need arose.

2. Alternative national defence and security structures in the Eastern bloc

A brief definition of terms is considered necessary to establish the main similarities and differences between public security organisations, official paramilitary structures and militias. Therefore, public security organisations, as suggested by the term, are structures meant to ensure security as it is defined at a certain moment, protecting persons, institutions, and territory against identified threats. Paramilitary forces are “forces or groups that are distinct from the regular armed forces of any country, but resembling them in organization, equipment, training”⁸, their, either legal or not, main characteristic being the assumption that violence must be met with violence. Militia is “n. 1 a military force that is raised from the civil population to supplement a regular army in an emergency. 2 a military force that engages in rebel or terrorist activities, typically in opposition to a regular army. 3 all able-bodied civilians eligible by law for military service”⁹. In what follows such structures that existed in the Eastern Bloc will be briefly presented.

2.1. The Polish People’s Republic

Considering the scale of Polish resistance, the fact that all the levers of power were in the hands of communists, as well as the manipulated elections in 1947, the *Volunteer Reserve Militia – Orchotnicza Rezerwa Milicji Obywatelskiej (ORMO)* was established, following the

⁶ B. Byely, Y. Dzyuba, G. Fyodorov, S. Kozlov, et al, *Marxism-Leninism on War and Army. A Soviet View*, University Press of Pacific, USA, 2002, pp. 160-170.

⁷ Neil Fodor, *The Warsaw Treaty Organisation: a Political and Organisational Analysis*, Palgrave Macmillan, UK, 1990, p. 7.

⁸ “Paramilitary” meaning. *The Oxford Essential Dictionary of the US Military*, 1st ed., Oxford University Press, USA, 2002, available online at: <http://www.oxfordreference.com/search?source=%2F10.1093%2Focref%2F9780199891580.001.0001%2Focref-9780199891580&q=paramilitary>, accessed on September 23, 2018.

⁹ “Militia” meaning, *Ibidem*.

initiative of the Polish Workers' Party, in 1946, soon after the Soviet takeover. It was considered a paramilitary organisation, providing reinforcement to the regular armed forces, being called militia as it voluntarily supported the communist police force, being under the control of the Ministry of Public Security.

"The ORMO units participated in anti-communist guerrillas in the late 1940s and in the collectivisation of agriculture in the early 1950s. Later they were used in such operations as attacks against students' demonstrations during the March events of 1968 and police activities after imposition of Martial Law in December 1981. In 1980, ORMO had over 460,000 members. It was dissolved in 1989"¹⁰. ORMO is considered to have played a crucial role in the famous "Three Times Yes" referendum in 1946 as well as in the manipulated elections in 1947, resorting to intimidation and violence. "Its members were recruited mostly from PZPR members, but included convicted criminals and other opportunists looking for extra income from the state and ready for street action"¹¹. All in all, ORMO's main role was to persecute the communist regime's opponents.

2.2. The Czechoslovak Socialist Republic

People's Militia also called the *Armed Fist of the Working Class* was a militia organisation of the Communist Party of Czechoslovakia, established in 1948 and disbanded in 1989.

As it has been already mentioned, the Third Republic was established in April 1945, and, in February 1948, it was a coup d'état, so that the communists, backed by the Soviets, took full control over the government. To help the process armed guard units were organised in factories, other industrial sectors and critical installations to protect property and prevent sabotage. They were renamed factory guards, in 1946, being equipped with pistols. Such groups were the predecessors of first Worker's and then People's Militia, established during the communist takeover in February 1948.

"The militia's mission was the defence of the socialist society, and militia personnel were given powers of arrest equal to those of the regular police"¹². Therefore, they had to protect the party against the movements likely to emerge following the communist takeover.

However, it seems that the People's Militia role during the Prague Spring in 1968 was rather ambiguous, as the organisation proclaimed its support for either reforms or Soviet ideology. "We deeply appreciate the attitude of the Central Committees of the CPCz and the Slovak Communist Party towards the People's Militia"¹³. Nevertheless, "despite, the position of the CPCz Central Committee, the existence and activities of the People's Militia have lately become a target for polemics (...)"¹⁴.

In the 1970s the organisation was rebuilt, regaining the confidence of the party leadership. "Although a membership goal of 250,000 had frequently been discussed by party officials, the total strength had always been shy of that figure; in 1986 membership numbered about 120,000. Specialised militia courses were given at the Ludvik Svoboda Higher

¹⁰ Piotr Wrobel, *Historical Dictionary of Poland, 1945-1996*, Anna Wrobel (ed.), Routledge, USA, 1998, p. 220.

¹¹ Geoff Bardell, *Sacred Weapons, Profane Enemies, Saint John Paul II's War on Communism*, Google pdf edition, 2014, p. 224, available online at: <https://books.google.ro/books?id=CjLbAgAAQBAJ&pg=PA385&lpg=PA385&dq=george+bardell+sacred+weapons&source=bl&ots=tej3LD6eHI&sig=fFJPIFs-BkrpkZJ5NmtNvurZ32U&hl=ro&sa=X&ved=2ahUKEwIj78TU8dDdAhXGDcAKHe4HBB0Q6AEwC3oECACQAQ#v=onepage&q=george%20bardell%20sacred%20weapons&f=false>, accessed on September 23, 2018.

¹² See: *Czechoslovakia. People's Militia*, available online at: <http://www.country-data.com/cgi-bin/query/r-3760.html>, accessed on September 24, 2018.

¹³ Jaromir Navratil (ed.), *The Prague Spring 1968, A National Security Archive Documents Reader*, the Prague Spring Foundation, Prague, CEU Press, Hungary, 1998, p. 164, *Document no. 41, Resolution and Letter to the Soviet People from the National Conference of the People's Militia*, June 19, 1968.

¹⁴ *Ibidem*, p. 165.

Academy of the Ground Forces in Vyskov. In 1987 President Husak was listed as the supreme commander of the People's Militia, and the chief of staff (who actually directed the organisation) was Miroslav Novak, who had held the post since 1973. In February 1981, Novak signed an agreement pledging the cooperation of the militia in a joint effort with SVAZARM to upgrade civil defence throughout the country. According to news releases, both organisations had traditionally been involved in civil defence, and the new agreement was designed to coordinate their endeavours¹⁵.

2.3. The German Democratic Republic

Following the mentioned events in East Germany, in 1953, on 29 September, the *Combat Groups of the Working Class* were established as a paramilitary organisation, consisting of volunteer units organised in companies to provide local security. The volunteers enjoyed certain advantages, in the context of the instrumentalisation of the social policy to shape attitudes and convictions compliant with the idea that the worker is the centre of power in the new socialist state. "...university scholarships went first to students and doctoral candidates whose political attitudes and class application were acceptable to the party, and substantial retirement bonuses were allotted to the members of the Combat Groups of the Working Class. (...) At the end of 1989 <combat group bonuses> were paid for approximately 4,000 pensions"¹⁶.

They were trained, equipped and supplied under the supervision of the Ministry of the Interior, having also a school, in Schmervitz, and a journal, *Der Kämpfer*. The forces, so-called weekend warriors, had armoured fighting vehicles, including SK-1 armoured personnel carriers; 82mm mortars; 76mm antitank guns; and 23mm and 37mm antiaircraft guns. Besides training and exercises, they took part in the construction of the Berlin Wall. Moreover, they participated in the Warsaw Pact exercises in 1970, being also involved in East Germany's programme of military aid to Africa, providing training and equipment for militia groups. After 1989, they were disbanded by the Parliament decision, being considered to have no relevance¹⁷.

2.4. The Hungarian People's Republic

The *Workers' Militia* was a paramilitary organisation established in Hungary, following the mentioned 1956 events, more exactly on 18 February 1957, in compliance with the order of the government. The organisation, which replaced the revolutionary regime's special police force, was intended to defend the means of production, being a voluntary service that provided some career advantages.

The organisation, directly controlled by the Hungarian Socialist Workers' Party, claimed to have 60,000 members in 1988. It possessed only small arms, its mission being officially limited to protecting the population and state property in times of war or unrest. In fact, the *Workers' Militia* assisted the national police and armed forces during events that required crowd control, becoming the protector of the Kadar regime¹⁸.

In June 1989, the government announced that it intended to take full control over the organisation, many of its functions being eliminated. It was disbanded in October 1989, following a referendum resulting in 94.9% yes¹⁹.

¹⁵ See: *Czechoslovakia. People's Militia*, available online at: <http://www.country-data.com/cgi-bin/query/r-3760.html>, accessed on September 24, 2018.

¹⁶ M.G. Schmidt, G.A. Ritter, *The Rise and Fall of a Socialist Welfare State, German Social Policy 4*, Springer-Verlag, Berlin Heidelberg, 2013, pp. 36, 53.

¹⁷ See: *Czechoslovakia. People's Militia*, art. cit.

¹⁸ See: *Hungary - A Country Study*, available online at: <http://www.country-data.com/frd/cs/hutoc.html#hu0218>, accessed on 24 September 2018.

¹⁹ *Ibidem*.

3. Case study – Romania and the Balkans

In the context of the main events characteristic of the Eastern Bloc and the Cold War, and of the alternative defence and security structures established mainly to protect the ideology and the party, there were some particularities in Romania and Bulgaria, Warsaw Pact member states, as well as in the Socialist Federal Republic of Yugoslavia, a non-aligned, although socialist, country. They are briefly presented in what follows.

3.1. The Socialist Republic of Romania

Following the end of World War II and considering the mentioned developments, the military institution in Romania had to undergo a process of transformation into “new”, popular armed forces, under the thorough guidance of advisers from Moscow. The “old” armed forces were not disbanded but restructured, important laws in this field being issued in 1945 (Law no. 186) and 1946 (Law no. 433), which resulted in the retirement, redundancy or conviction of those considered outdated or even dangerous. Moreover, the “*Tudor Vladimirescu*” Division was established in Moscow and sent to Romania to help the armed forces politicisation process. Between 1957 and 1964, the year when Gh. Gheorghiu-Dej officially proclaimed what was called Romania “*declaration of independence*”, in the famous speech delivered at the Plenary of the CC of the RWP in April 1964²⁰, numerous changes in the organisation and structure of the armed forces of the Romanian People’s Republic (the official name of the country at that time) occurred. Mention should be made that among the provisions of the Constitution of the Socialist Republic of Romania adopted in 1965, the defence of the country was the duty of every citizen, breaking the oath, betrayal of the country, cooperation with the enemy and damages to the defence capacity being considered crimes against the people²¹.

Communists officially took power in Romania on 6 March 1945. Before that, in September 1944, the *Patriotic Defence Guards (Gărzile de Apărare Patriotică)* were established in order to help the process. They were developed under the supervision of the Soviet Security Services, enjoying Soviet logistic support, being commanded by Emil Bodnăraş. The Guards were used to destroy those considered “*fascists*” and to discourage the so-called recalcitrant elements to resist change. Among those who were part of the organisation there were detainees and former members of the Iron Guard, who were considered skilled in intimidation and violence. On 15 January 1945, General Rădescu, who was the prime minister at that time, ordered the disbandment of the Guards, but Teohari Georgescu and Emil Bodnăraş ignored the order²².

In 1968, after Romania refused to participate in the invasion of Czechoslovakia, event previously described, the *Patriotic Guards (Gărzile Patriotice)*²³ were established, in compliance with Decree no. 765/1968. It was a modern paramilitary organisation whose declared goal was to defend the revolutionary achievements of the people²⁴, meaning a type of

²⁰ Gh. Gheorghiu Dej, *Declarația cu privire la poziția Partidului Muncitoresc Român în problemele mișcării comuniste și muncitorești internaționale adoptată la Plenara largită a CC al PMR din aprilie 1964*, Politica Publishing House, Bucharest, 1964, p. 15.

²¹ Constituția Republicii Socialiste România, 1965 (In English: *Constitution of the Socialist Republic of Romania, 1965*), available online at: <http://www.monitoruljuridic.ro/act/constitutia-republicii-socialiste-romania-republicata-emitent-marea-adunare-nationala-publicat-n-buletinul-oficial-nr-65-din-14938.html>, accessed on September 25, 2018.

²² Dennis Deletant, *Primii pași ai acaparării*, Revista 22, June 16, 2006, available online at: <https://www.revista22.ro/primii-pasi-ai-acapararii-2805.html>, accessed on September 25, 2018.

²³ Mihai Retegan, *1968 - Din primăvară până în toamnă. Schiță de politică externă românească*, Rao Publishing House, Bucharest, 1998, p. 277.

²⁴ Ioan Ciupeș, *2009-Anul Statului Major General*, Document Journal No. 1(43)/2009, year XII, Bucharest, p. 76.

inclusive public security organisation, fulfilling a wide array of functions in peacetime and at war. The ideology behind the establishment of the *Patriotic Guards* was expressed in *The War of the Entire People* military doctrine, in line with the Yugoslav *Total People's Defence* doctrine. Moreover, during the famous speech on 21 August 1968, in which the leader of Romania at that time, Nicolae Ceaușescu announced the refusal to participate in the invasion of Czechoslovakia by the troops of the Warsaw Pact member states led by the Soviet Union, he appealed to anti-Soviet sentiments within the general population to gain the support for resistance against the perceived threat of a similar manoeuvre against Romania.

The *Patriotic Guards* were, declaratively, armed structures consisting of workers, peasants and intellectuals to ensure the Romanian people peaceful achievements, and the homeland independence and sovereignty²⁵. In 1968 it was also initiated the national programme meant to prepare the youth for the country defence, thus military training themes and sessions for the young population irrespective of gender being introduced in all the curricula.

In the context of the country defence, it was issued Law no. 14/28 December 1972²⁶ regarding the organisation of the national defence of the SRR, numerous provisions being related to the Patriotic Guards. Therefore, in Ch. 3, Art. 8, b., c., h., it was stipulated that the SRR Defence Council approved the measures related to the general organisation and training of the Armed Forces and the Patriotic Guards, both having a chief of staff. Art. 10 e. showed that the Ministry of National Defence and the Ministry of the Interior were responsible for the equipment of the Patriotic Guards with the necessary armament, ammunition and combat assets, as well as for the training of the guards and the youth for the defence of the country. Moreover, Art. 18, b. stipulated that the Local Defence Councils implemented the necessary measures for the preparation of the population, the patriotic guards, youth detachments and other civilian organisations for defence in case of air attacks, as well as for fire-fighting, first aid and other sanitary-related activities. Ch. 3, Art. 104 stipulated that the mentioned organisations could support the border guards in defending the frontiers as well as the militia regular forces in ensuring public order, tactical exercises being conducted in this respect. Therefore, it could be noted that the Patriotic Guards could accomplish, at least theoretically, a wide array of missions, in peacetime and at war, in different fields such as industry and infrastructure, public order, border defence, civil engineering, medical care, anti-aircraft defence, early warning, anti-airborne defence, rear area security, resistance operations, almost similar to those that could be conducted by the Yugoslav forces of the type under the general national defence, which will be presented in what follows.

As for the organisation of the Patriotic Guards, in 1989, there were about 700,000 citizens, men and women, in the Patriotic Guards, being organised into company- and platoon-sized units in almost every county, municipality, town, village, and industrial or agricultural enterprise. In keeping with their guerrilla image, the Patriotic Guards wore plain uniforms with no insignia or badges of rank²⁷. The Patriotic Guards were disbanded after 1990.

3.2. The Socialist Federal Republic of Yugoslavia

The Yugoslav People's Armed Forces have their origins in the Yugoslav partisan units

²⁵ Alexandru Oșca, Teofil Oroian, Gheorghe Nicolescu, Vasile Popa, *Tentația libertății. Operația "Sumava" - un simplu pretext*, Military Publishing House, Bucharest, 1999, p. 94.

²⁶ *Legea no. 14/28 decembrie 1972 privind organizarea apărării naționale a RSR*, Monitorul Oficial nr. 160/29 decembrie 1972 (In English: Law no. 14/ December 28, 1972 on the organization of national defence of SRR, Official Gazette no. 160, December 29, 1972), available online at: <http://legislatie.just.ro/Public/DetaliiDocument/297>, accessed on September 25, 2018.

²⁷ See: *Romania - A Country Study*, available online at: <http://www.country-data.com/frd/cs/rotoc.html#ro0215>, accessed on September 25, 2018.

during WW II, the People's Liberation Army of Yugoslavia playing a decisive role in the antifascist People's Liberation War of Yugoslavia²⁸. 1948 was the year of the famous Tito-Stalin split. Therefore, Yugoslavia was a socialist state, but it was not a Warsaw Pact member state, being thus a non-aligned country. Against that background and considering the threat posed by the Soviet invasion of Czechoslovakia, the Yugoslav military devised a new concept of general national defence. Therefore, the *Territorial Defence* military formations were established in 1969.

The *Territorial Defence* forces acted as a military reserve or official governmental paramilitary forces, based on the concept and then doctrine of *Total National* or *Total People's Defence*, starting from the premise that the regular armed forces of a small country could not defend the particular country in the event of being attacked by a more powerful state, thus a national resistance force was necessary. As a result, to enable the rapid and full mobilisation of the population in the event of a foreign invasion, every person, including women, from 15 to 65 years of age, was made subject to military or civil defence call-up, the second tier of those forces being formed by reservists, commanded by local reserve officers and armed from local depots²⁹.

As far as the organisation of the *Territorial Defence* system was concerned, there were structures from platoons to companies and battalions of 150 or more, depending on the mission. The units formed by factories or local communities could act independently, being coordinated by the opstina, an important feature of such type of organisation being its mobility, characterised by the possibility of larger units to be divided in smaller units, and of the smaller units to merge in larger units. As for the youth integration, the units were often reluctant to accept teenagers as full-fledged soldiers, thus special youth detachments being established to include school and university students not yet subject to conscription. Special interest groups such as rifle clubs, ham radio operators and flying clubs were also included in the system, undertaking defence training. The *National Defence Law* provided also for voluntary service by youth under 19, women and men who had been exempted, commissioned and non-commissioned officers providing both professional and political leadership and training. In terms of missions, they were varied, the emphasis being on antitank, antiaircraft and anti-airborne operations³⁰.

The Territorial Defence forces were highly decentralised, which led to concerns, considering the federal organisation of the country, concerns that became reality during the breakup of Yugoslavia, many of the members turning into separatist paramilitary or contributing to forming the armies of the states that emerged following the disintegration.

4. The People's Republic of Bulgaria

The Communist Party in Bulgaria was the second largest party in the country starting in 1919. Even outlawed for a certain period, it was the dominant element in the *Fatherland Front*, a coalition having an anti-fascist character, which also intended to overthrow the dictatorial regime of King Boris. When the Soviet Union declared war on Bulgaria, in September 1944, the Fatherland Front, helped by the Red Army, succeeded in seizing power, being the ruling force in Bulgaria between 1946 and 1989. Mention should be made that the

²⁸ David P. Forsythe, *Central and South-Eastern Europe 2004*, Europa Publications, London, 2003. pp. 27-28.

²⁹ Aleksandar Pavkovic, *The Fragmentation of Yugoslavia. Nationalism and War in the Balkans*, 2nd ed., Palgrave Macmillan, 2000, pp. 58-60.

³⁰ From "*National Communism*" to *National Collapse*, US Intelligence Community Estimative Products on Yugoslavia, 1948-1990, NIC 2006-004, December 2006, pp. 10-13, available online at: https://books.google.ro/books?id=hYzo_TJ1BM4C&printsec=frontcover&hl=ro&source=gsbs_ge_summary_r&cad=0#v=onepage&q&f=false, accessed on September 25, 2018.

Communist Party was not hampered by anti-Russian feelings. Under such circumstances, there was no need of an auxiliary force to secure the communist takeover.

During the analysed period, one major concern of the country leaders was represented by the ethnic diversity of the country, the Turkish population, in particular. In this context, it is worth mentioning the events in 1985, when the communist regime decided to assimilate the Turkic ethnic group, representing about 10% of the population, decision that was met with opposition. Therefore, the regular armed forces were called to intervene, that being considered the most important operation in which the Bulgarian regular forces participated since WW II, resulting in Bulgaria condemnation by many international organisations, the UN included. Considering the economic decline and the Turkic ethnic group exodus, in July 1989, there were adopted certain measures related to the mobilisation in peacetime. In compliance with the decisions, the Bulgarian citizens had to perform supplementary activities, voluntarily, especially in agriculture, thus proving their patriotic feelings and the will to defend the nation against the foreign enemy, being told that they had to work instead or because of the Turks³¹.

Conclusions

In conclusion, following WW II, the so-called Eastern Bloc had to adopt the ideological model imposed by Moscow. The transition of the countries in the area to socialism and communism was smoother or harsher, depending on the situation, as it has been briefly presented above. Anyway, a dominant characteristic was the fact that regular armed forces in the particular countries were highly politicised. As for the military doctrines developed in the Eastern Bloc, they were largely compliant with the Soviet directives, summarised by Marshal Sokolovsky in the book published in 1962, *Military Strategy: Soviet Doctrine and Concepts*.

With regard to the alternative defence and security structures, some of them were established in the early years of communism to help its implementation (Poland, Czechoslovakia, and to a certain extent, Romania), or after important crisis situations (Hungary, Romania and Yugoslavia – a non-aligned country). It is interesting to note that in the case of Romania such structures were established to defend the country against “fraternal” forces, expressing, at least theoretically, the instrument of a policy related to resisting the Soviet pressure. However, the question arises if, in the event of war, the forces established following the total or the entire people war doctrines could prove functional and able to actually coordinate their actions with the ones of the regular armed forces. Anyway, all the mentioned structures represented, one way or another, the “armed fist of the party”.

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³¹ Milena Savova-Mahon Borden, *The Politics of Nationalism under Communism in Bulgaria. Myths, Memories and Minorities*, pp. 296-298.

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RISKS AND THREATS TO THE SECURITY OF ROMANIA

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Abstract: *The diversification of threats to the international security environment has led to essential changes in their physiognomy and characteristics. Threats to Romania's security in the current security context manifest and will manifest, both by conventional and non-conventional means, in the military and civilian spheres that makes them sometimes difficult to be predicted. The complexity and dynamics of the current international security environment has entailed Romania to take measures to defend and counteract new types of threats. This was made internally as well as in the framework of the alliances, coalitions, partnerships to which Romania is part. The main goal of these measures was to involve itself in providing the security of its own citizens as well as contributing to the achievement of regional stability, in order to integrate the Southeastern European space in the continental and Euro-Atlantic security architecture.*

Keywords: *security, risks, threats, state actors, non-state actors, environment, space.*

Introduction

International agencies have seen over the last three to four decades an increase in the risks, dangers and threats to the security of state actors, which has increased the level of caution from international agencies and states in the field of security. Each state actor took action accordingly depending on the risks, dangers and identified threats having influence over their security.

"Security" as a term comes from Latin `securitas – securitatis` and means "to be sheltered from anything; the sense of security that someone is gives in the absence of any danger"¹. In defining the security concept, it is necessary to address several factors, starting from the human needs presented by Abraham Maslow in his hierarchy of needs where the need for safety presented on the second level is in a very intimate connection with individual security.

Man as a singular element in need of safety, from the beginning of mankind, felt the need to have protection, to be safe both himself and his family, he organized in groups, groups that with time in the evolution of mankind became clans, tribes and developed into states, states have guaranteed and guarantee individual security through its instruments of power such as diplomatic, economic, military, and not least informational.

By creating human groups and the emergence of the state, a form of group security emerged and developed in time to the concept of collective security introduces the idea that "the realistic dilemma of security can best be overcome not by the balance of power and by self-help, but by establishing collective commitments by which each state assumes the duty of joining others against those who threaten territorial integrity or the political independence of

¹ *Dicționar explicativ ilustrat al limbii române*, ARC Publishing House, 2007, p. 1767.

one of the members of the collective commitment”². In the development of human societies, the need to have both individual and collective security has created the development of diplomatic, economic, military and informational domains, which by the use of levers specific to each field ensures the need for security.

The security concept is also presented in the “International Relations Dictionary” as being associated with the absence of threats against important values, “Security can be absolute, in other words the absence of any threat is equivalent to full security and vice versa, in a system of total threats, in a system of implacable threats, a systematic paranoia can be reached”³. Therefore, it leads to the occurrence of threats against a state, a coalition, an alliance, between states by other states, coalitions or alliances, threats that need to be identified and counter-measures taken on various levels such as diplomatic, economic, military and informational.

Along with the crystallization of the socio-human organizations, the concerns about their security appeared, for that purpose the means and conditions necessary for the prevention and rejection of the aggression were provided. At the basis of security stand practice and theory of force through which principles, norms and ways of organizing forces were issued to discourage aggression and resistance to aggressive actions.

1. Risks and threats to Romania’s security

In order to ensure security, national states have resorted to the foundation of international security structures which, on the basis of specific principles, rules and instruments, can achieve cooperation and understanding between international actors. Thereby, in Europe are constituted and functional: the United Nations (UN), the Organization for Security and Co-operation in Europe (OSCE), the North Atlantic (NATO) Organization, the European Union (EU), the Council of Europe and a series of regional security organizations.

In order for states to be able to promote and defend their national interests, in a world where risks and threats to them no longer have borders, they are obliged to integrate into security structures, the only ones able to identify the dangers to international security. In these structures, national states and other organizations can best contribute to establishing the rules to be respected by all international actors and to create the necessary instruments to ensure international stability and cooperation.

Under the current security environment, national states are required to adopt internationally recognized rules and principles, transferring some of their prerogatives which belong exclusively. International agencies tend to takeover elements of security, a phenomenon that will increase in the near future. National states can no longer solve the complex and unpredictable security issue by its own, and therefore the integrity in these security structures has become a necessity. International organizations, according to their structure, are divided into: intergovernmental organizations (member states) and non-governmental organizations (members of which are private individuals, groups of people or private institutions).

The evolution of international organizations is hard to anticipate, as they also suffer from adaptations to situations created after the disintegration of the bipolar security system. It is certain that their role in preventing crises and enhancing the sphere of enlargement will increase by the adherence of most states. Many of the tasks of the current security bodies

² Vasile Pirnea, *Dimensiunea de securitate si aparare a Uniunii Europene*, Army Technical Editorial Center Publishing House, Bucharest, 2005, p. 24.

³ Graham Evans, Jeffrey Newnham, *Dictionar de Relatii Internationale*, Universal Dalsi Publishing House, Bucharest, 2001, p. 501.

overlap, which will inevitably lead to finding the right tools for collaboration and streamline of actions.

“Risk-Risks” as a term means “the possibility of facing a danger, harm, trouble, etc. (hopefully at a happy ending)”⁴, extrapolating to a social security system on a state actor on the international scene, in my opinion, may mean more possible risks on military, economic, social, political, technological and environmental aspects that a state, coalition or alliance has to face from another state, coalition or alliance.

Analyzing the current security environment, characterized by the deterioration of the regional and international security situation, we can identify a number of risks that may have a direct or indirect impact on Romania's national defense such as: regional instability, failure to achieve Romania's development goals, social exclusion, radicalization of extremist entities, cross-border crime, illegal trafficking of conventional weapons, low-intensity military confrontations - persistent in time, migratory flows generated by natural disasters, pandemics, ecological disasters and civil wars.

We believe that the risks identified by the Romanian state bodies and presented in the National Defense Strategy for the period 2015-2019 are comprehensive and identified in the overall context of security, these are analyzed, observed and monitored by the state organizations from the national defense system.

The above-identified national defense risks can generate conflicts, some of the conflicts depending of their nature may escalate to military confrontations.

Analyzing the risks identified within the National Defense Strategy with direct influence to the national defense, we consider that they can be approached as follows:

Regional instability determines the Romanian state by the actions taken by its bodies to maintain a proper level of national stability and through the actions taken at regional level to be a security provider and become a regional stability pole in Southeastern Europe. Regional conflicts escalation near Romania can destabilize the region and implicitly affect regional security, which as a consequence affects national security. This is a present-day risk, in a latent state (the Western Balkans area) and sometimes active and even explosive, if we refer to the recent developments in the proximity of Romania, namely Ukraine.

These risks, which affect the regional and also Romania's security, by being in the immediate vicinity of Romania, may create armed conflicts that can degenerate into war, by Russia involvement in these areas, invoking different motives such as the protection of the Russian nationality population in Ukraine or even the Republic of Moldova, and actions in which the Russia's involvement cannot be certainly demonstrated but which will lead to direct or indirect actions, armed or non-armed on and over the Romanian state, as a consequence of the fact that Romania is a member of the NATO alliance, an alliance that is in contradiction with the interests of the Russian Federation, and also because Romania hosts on its territory elements of the US anti-missile shield, which, a threat to its security.

The non-accomplishment of Romania's development objectives is a risk of an internal nature, but its consequences lead to an increase in the economic and developmental differences between Romania and the member states of the international security bodies, which creates that internal instability, but also internationally, on many developmental layers such as the economic one, which causes social problems, culminating in the emergence of social uprisings, revolts that create regional instability which can undermine the stability factor that Romania represents in the regional stability framework, and in the last case may lead to the erosion of good governance, triggering the distrust of foreign partners from the international security organizations.

⁴ *Dicționar explicativ ilustrat al limbii române*, ARC Publishing House, 2007, p. 1687.

An example of a risk that may arise from the non-accomplishment of Romania's development objectives and which may have consequences for Romania's security is the lack of development of the road and rail infrastructure, which further will have consequences on the deployment and mobility of the allied and national forces who will have to intervene in case of armed aggression on Romania.

In this context, Romania must actively participate and invest in the achievement of the proposed objectives (economic, diplomatic, social, military, technological, infrastructure, legal, energy, education and health), because their non-accomplishment creates a series of vulnerabilities that can be exploited by an adversary in order to win any type of war, whether military, economic or hybrid.

Social risks are social differences in society due to a number of factors, especially those of an economic nature, these risks can create internal social instability, which by their effects can affect social security.

Social risks can be physical risks and economic risks.

Physical risks occur when labor is altered, reduced or lost. These risks may be of professional origin, namely in the event of an accident at work or occupational disease and of extra-professional origin, are largely natural risks assumed by the state's social system. For these categories of people, the state must provide them with a social protection.

Economic risks are generated by situations where workforce is altered, it is impossible to exercise due to lack of employment, for example: unemployed. These types of risks create social problems, such as strikes, riots of the population on the state governance system.

Due to the lack of jobs in some areas or poorly paid jobs on other Romania experienced a labor migration to more developed countries, especially in Western Europe and beyond. The consequence of population migration, leads in time to the economy weakening, low-skilled people employment, which in time causes the economic underdevelopment of the state with serious consequences on national security as the state can no longer invest in the security structures within the national defense system, including the armed forces, entities that ensure the security of citizens.

Another consequence of labor migration may be the acceptance of another type of labor force coming from the extra-community space, even from conflict zones, consequently arising risk of infiltration into the country of members of the cross-border crime networks, or even those who do part from the terrorist networks, affecting in this way the security of the citizens of the state.

The radicalization of extremist entities is a risk that exists and can develop both internally and externally. The emergence of extremist entities, especially externally one can bring instability to Romania's security through the terrorist actions they can bring to the citizens of the Romanian state in the country and abroad.

Today, however, we are confronted with a phenomenon preceding terrorism, namely radicalization, for which there is a wide range of definitions, their common element being that some individuals adopt beliefs or ideologies "in which's name" they commit acts of terrorism. The definition given by the European Commission to the term radicalization is focused on: "the phenomenon by which certain people who adhere to certain points of view, opinions and ideas can be determined to commit terrorist attacks."

The issue of radicalization is the object of inter-institutional collaboration, offering solutions, especially in the monitoring plan, as a risk to the national security of Romania.

Terrorist actions that can be produced through the radicalization of extremist entities are already a global scourge, a fact that does not bypass the Romanian citizens, the Romanian state in general, because the Romanian state has been involved and actively involved with the international partners in the antiterrorist struggle goes to several places in the world, such as Afghanistan, Syria and Iraq.

At present, this risk of radicalization of extremist entities, whether inside or outside the country, has not manifested itself on our country's territory through terrorist actions on our citizens, but this phenomenon exists and can escalate, on our territory unless measures are taken to monitor and counteract those extremist groups to radicalize and undertake terrorist actions. These risks treated with superficiality today can become a fulfilled fact, tomorrow, and a real threat to national security.

There were terrorist threats at the declarative level addressed to Romania, not directly, in 2015, on November 26, these being made by the terrorist organization ISIS, which published on the internet a list of 60 countries fighting against it which is also Romania.

Cross-border crime is a risk to national defense because it is out of control, it can bring about a series of social problems by introducing the influence of the international criminal organizations on the on the domestic criminal activities and using those to facilitate the transit to Western and other countries. These organizations are able to communicate each other at the local, regional or global level, using current modern technologies such as the internet, mobile telephones, satellite communications, or couriers that disguise themselves as tourists.

Cross-border crime can harm the social values protected by the legal norms of Romania, which leads to the weakening of the state's power, by favoring and hosting members of terrorist organizations in these groups of criminals, and also may be a way by which members of these groups can infiltrate political structures, using corruption of the politicians and state representatives using the money they possess from criminal activities (trafficking of human beings, drug trafficking, illegal migration, trafficking of strategic goods, organized economic crime, cyber-crime, terrorism) in order to gain power and influence at local, regional and even global level in order to continue their illegal activities without being impeded.

This is a risk if not effectively combated, can foster local conflicts, with the risk of exploiting these phenomena by other state and non-state actors interested in destabilizing an international state or international organization security.

Illegal trafficking of conventional weapons is a risk that can affect the stability of a state or organization because illegal arms trafficking feeds criminal and terrorist organizations as well as enabling them to perform armed actions on the rule of law by creating and feeding conflicts in different areas, leading to the emergence of local, regional and international instability that can easily develop into war.

Migratory flows generated by natural catastrophes, pandemics, ecological disasters and civil wars are a risk to national defense simply because these flows of populations affected by these phenomena create a social, cultural and economic imbalance on the indigenous population, but also through the fact that, with the migration of the affected population, criminal and terrorist groups can infiltrate, which by their criminal actions can affect national and international security and stability, creating conditions for conflicts of a military nature.

“Threat-Threats”, as a term means “manifestation by words, gestures, etc. of the intent of harming someone”⁵, therefore applying meaning to the present term to a state actor, in my opinion, I consider that it represents any statement made by the governing bodies of a country, alliances or coalition with the intent of harming another country, alliances or coalition.

Threats that may affect national values, interests, and national goals are those capabilities, strategies, intentions or plans such as: destabilizing actions (migration, organized crime), the perpetuation of frozen conflicts in the Black Sea region and the instability in the

⁵ *Dicționar explicativ ilustrat al limbii române*, p. 60.

Western Balkans - distortions on the energy markets (competing projects of state or non-state actors), cyber threats (launched by state or non-state hostile entities), terrorism, the proliferation of weapons of mass destruction and carrier vectors, hostile information actions. Threats can be of a military, political, economic, cybernetic nature⁶.

Military threats have been considered in the past to be the main threat to security. At this point, this is about to change through the emergence of political, economic and social threats, but it does not mean they do not exist, they have emerged as a transformation to asymmetric and hybrids, the classic military threat exists, sometimes at small or medium intensity on a state.

At present, there is no direct and immediate threat to Romania, but there are outbreaks of armed conflicts, some active such as Ukraine, some latent such as the Western Balkans and the Black Sea area.

Verbal threats given by some Russian officials have existed over Romania, threats that have only materialized in a declarative way, which denotes the fact that the military threat has remained and is still up to date.

Political threats refer to political domain threats and the terms of sovereignty, independence and territorial integrity must be considered.

The political stability of each member state of the Euro-Atlantic area is a regional stability generator due to the global connection of states.

Political threats are directed mainly against the rule of law or international institutions, the violation of human rights by dictatorial or fundamentalist political regimes that deny the identity, sovereignty and indivisibility of states by other states, the intervention of a state or non-state actor in domestic affairs of another state.

In the range of political threats, the threats of ethnic groups hostile to a state, hostile propaganda, or through and support for political groups of a state by other state or non-state actors may be added.

Economic threats have an impact on a state's economy, the market economy at this time is the only form of state development and prosperity that stimulates the development and growth of competitiveness, production, consumption and inter-state trade. The economic development of a state is a pillar of stability and political power, so the economic threats to a state would be: unfair competition on the international market, the monopoly over resources and raw materials, and the disproportionate ratio of limited resources to demographic growth. All these threats make a state have a poor economy and be vulnerable and sometimes blackmailed in political relations. Economic isolation by imposing economic sanctions may be one of the measures taken against a state.

The economic expansion of a rival state actor can be considered a threat to another state actor if it is taken into account with the development of military capabilities.

Economic threats can be considered as an attack on security in the conditions in which the action is directed and can lead to material loss or pressure on national institutions and can bring substantial damage to the health of the population of the target state.

Threats of a cybernetic nature are the threats addressed to a state actor by other state or non-state actors in the information and communications environment.

At this time and in the future, it is increasingly spoken of easy access to information through the Internet and communications, fact that generated a cyber space, characterized by the lack of borders. This space, besides the fact that it has led to the development of companies by accessing the virtual environment, has generated and generates risks at individual, state and cross-border level.

⁶ *Strategia Națională de Apărare a Țării pentru perioada 2015-2019 (In English: Romanian National Defence Strategy for 2015-2019)*, p. 14.

Cybernetic space as a result of the development of communications and information infrastructure and the evolution of digital technology has led to the modernization and digitalization of the activities of public and force institutions as well as to member states in international organizations. One of the cyber threats is the attack organized by state actors through non-state, undeclared organizations targeting the cyber-attack on the communications and data system of state institutions.

From the range of cyber threats, a particular threat may be the possibility of early incorporation (concealment) in computing and communications equipment by the software companies of some malware software that can be activated by opponents with the intention of creating chaos in networks information and more serious in decision-making. For example, the cyber-attack on the Ukrainian computer networks in 2010 of a malware known as “snake”, which is a powerful spy tool and allowed access to the Ukrainian government networks.

Among the cyber threats addressed to a state actor, unauthorized interception, jamming, interference, misleading, or traffic analysis can be considered.

The current geopolitical context imposes on states a new paradigm of national security culture, namely the cybernetic dimension that brings both advantages and disadvantages to the state actors involved.

2. Considerations on the current security aspect

With the disappearance of the bipolar world represented by the United States of America and the Soviet Union of the Soviet Socialist Republics, which polarized around them states that formed opposing military power blocks (NATO and the Warsaw Treaty), and the emergence of several state and non-state actors polarizing each one according to their own political, economic, territorial-ethnic or religious interests has led to the apparition of a complex international security environment that has led to the emergence of risks and threats of asymmetric character, sometimes difficult to predict. The current security environment is characterized by the unpredictability of state actors due to the phenomenon of globalization and absence of clear policy lines and actions sometimes unseen, undertaken in different areas and on certain levels of action, create global insecurity.

Another feature of the current security environment is fragmentation of states, a complex phenomenon based on different actions based on ethnic and ultranationalist criteria of various state actors on the global, regional and zonal scene. These actions taken by different actors sometimes have at the basis of the influences and interests of states, coalitions or strong and influential global alliances.

Maintaining traditional tensions, as well as creating new ones, their development is intrinsically influenced by the emergence of unconventional and cross-border risks such as terrorism, organized crime or the proliferation of weapons of mass destruction.

The current security environment is characterized by a relatively high degree of unpredictability, instability, manifestation of new risks and threats, especially asymmetric, redefining the relations between the major powers and increasing the freedom of action of regional, state and non-state actors.

Depending on the size of the territory occupied by international security subjects, it can still be characterized as global (global), continental, regional, and sub-regional.

Romania as a sovereign and independent state, acting as a state actor in the current international security context, chose to join and integrate into various alliances, partnerships, initiatives, projects, cooperation relations with the main purpose of achieving security over its population and promote own domestic and international interests.

The National Country Defense Strategy Guidelines for the period 2015-2019 present the concepts of security, the architecture of the National Security System, the directions of

action concerning the security of citizens in order to protect and safety in a world in which the security environment is fluctuating and unpredictable.

The evolution of the security environment in the last two decades has undergone transformations, with immediate consequences on the military domain, diversifying and complicating the doctrine, strategy, mission nature and organization of the armed forces, as well as policies on the projection and construction of national defense.

The contemporary security environment has as its main feature the replacement of the bipolar world with a new global geopolitical architecture, in which a multitude of interethnic, religious, political and other conflicts arise and manifest, with the direct consequences of the collapse of some national states, disintegration or weaken the capacity of other state structures to face new challenges.

Conflicts and crises that are in the proximity of Romania, such as Eastern Europe, the Western Balkans, the Middle East and North Africa, the aggressive attitudes of state and non-state actors are generating insecurity and imbalances at regional and global level, implicitly affecting the security of Romania, due to its membership in the political-military structures of which it is part, structures that are involved in carrying out actions in those areas.

In the current security context, Romania is subject to risks and threats that are in areas such as military, economic, social, political, technological and environmental.

Regional instability characterized by frozen and sometimes low-intensity local conflicts near Romania (Western Balkans, Transnistria, Ukraine) as well as the development of a new type of war (hybrid war) by certain state or non-state actors, actions which affects national defense.

The identified risks and threats that have an effect on Romania's national defense must be countered by political, economic, social, technological, and, last but not least, military actions.

In order to achieve and ensure national security, active measures are taken to use diplomatic, economic, military and informational power instruments in accordance with the European and Euro-Atlantic community's rules of conduct.

The current evolution of the global security environment is in a continuous transformation that creates issues of interdependence and unpredictability in the system of international relations and the difficulty of clearly identifying the classical, asymmetric or hybrid risks and threats.

Romania's geographic location on the eastern flank of the North Atlantic and European Union and the interference of high-security security areas require the establishment of measures to ensure predictability and consensus in the use of independent national and allied instruments.

The main pillar of stability and guarantor of Romania's security is the North Atlantic Alliance, as well as its strategic partnership with the United States of America, and how European allies and partners will allocate resources for developing their own defense capabilities.

In the current security context at the Euro-Atlantic level, the Russian Federation has a major influence in the European area and the Euro Atlantic. Its actions in the Black Sea region in violation of international law, reiterating the international order, opening frozen conflicts and annexing Crimea has prompted the attention of international and European security bodies that have reiterated their role in fulfilling fundamental missions such as collective defense.

By placing the missile defense system on Romania's territory by the United States of America, it generates an important security aspect for the protection of national territory against any short- and medium-range missile attack and the intercontinental final phase.

The anti-missile system's location on Romania's territory generated reactions in Russian political environments, which could turn into a new arms race and a threat from the Russian Federation on Romania's security.

In this context, Romania's assumption of hosting elements of the anti-missile system is a confirmation that Romania is a trusted partner of the United States of America and the North Atlantic Alliance, this will increase Romania's security level and implicitly the alliance security level.

The integration of Romania as a member of the North Atlantic Alliance and its membership of its principles and values regarding democracy, respect for human rights and the rule of law ensure the national freedom and security deriving from the Alliance's fundamental missions such as collective defense, crisis management and security through co-operation⁷.

Conclusion

The risks and threats that are directed towards our state have determined and determine Romania by its institutions to strengthen its power by adopting and highlighting the values, ambitions and individual achievements of citizens as well as the adoption of European and Euro-Atlantic values in order to ensure the security of citizens.

The emergence of an immediate conflict on Romania and implicitly on the North Atlantic Alliance is unlikely but difficult to predict on the long term, but in this moment condition does not mean that there are no challenges, risks and threats to national security, the Alliance and the Union European Union whose membership is also Romania.

This determines Romania's responsibility as a state to engage and actively participate in the achievement and development of a secure security environment with our partners and allies.

In order to achieve and develop a safe security environment, Romania uses, besides using the diplomatic, economic and informational power tools, also the military instrument, a power tool which, if the other three instruments of power did not yield to solve some differences, the military instrument namely the use of force as the last option. This last instrument is represented by the National Defense System through Romanian Armed Forces as the main defense structure.

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⁷ *Doctrina Armatei României* (In English: Romanian Armed Forces Doctrine), 2012, p. 38.

THE BRAND AND IMAGE OF A NATION IN INTERNATIONAL POLITICS

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Abstract: *Our study has as a central idea the fact that the public diplomacy and branding of a nation must be seen in complementarity. In the context of the current globalization and extended mediatization, companies and nation-states alike are involved in an effort to establish images and symbolic representations in order to differentiate themselves among the others. By building a visible and attractive country brand that is representative for its people and society, a state (re)builds its credibility in international politics, increases its influence in international organizations and institutions, improves its image in order to build durable economic, cultural and security partnerships.*

Keywords: *branding, public diplomacy, country image, competitive identity, societal security.*

Introduction

A term in fashion nowadays, *competitive identity* brings public diplomacy close to that of country brand in the effort of a society and nation to actively involve itself in international politics aiming to attain its objectives and interests.

The notion "brand" has become in recent years one of the most used in the field of commercial promotion and public relations, envisaging a certain society or the international politics arena. The brand is currently the central element of any image strategy, regardless of whether it is about promoting a product, service, institution or country. The branding of a nation appeared relatively recently and started from the premise that people's perception of a state or political organization can be modified by using the same instruments that commercial enterprises use to sell their products. This approach seems to be more and more popular among Western states, although it is difficult to bring solid evidence that it also works or that it is beneficial to use such a commercial approach in politics.

1. Brand and country image

The growth of economic and financial interdependencies, geopolitical rivalries and economic competition created the need for nations to actively and integrated "mark" themselves, according to what we believe are the four pillars or critical dimensions of nation branding: public diplomacy, tourism, exports and foreign direct investments. We believe that these dimensions constitute the fundamental elements that give consistency to the image of any contemporary nation. Of course, there are other significant dimensions as well, because,

beside tourism, exports and investments, some countries relied on dimensions such as people, culture and heritage in their activity to build a favorable image¹.

In order to understand how a country brand is built, but especially how a country image is managed in international politics, it is useful to be well familiar with concepts like brand, image, perception, stereotype, etc. We can find information about these notions in the field of academic disciplines, at the frontier of brand theories, like communication sciences, marketing and publicity, but also social psychology.

The introduction of the notion of *country image* in marketing theory was first achieved by Howard and Sheth (1968) as a distinct component in consumption decision. Recent research in the field of country image was conducted in the nineties in the works of Philip Kotler: *The Marketing of Nations* (1997), *Marketing Places in Europe* (1999), *Marketing Asian Places* (2002) and *Marketing for Hospitality and Tourism* (2005) or Eugene Jaffe and Israel Nebenzhal *National Image and Competitive Advantage* (2001), Peter Van Ham in his article *The Rise of the Brand State*, in *Foreign Affairs* (September 2001). In April 2002, *The Journal of Brand Management* dedicated a special issue to the subject of country brand, publishing contributions by academics (Kotler, Papadopoulos, Gertner, Heslop, and Gilmore), consultants (Anholt, Olins) and practitioners. Beginning with 2004 the *Place Branding* journal has been published, dedicated to place and country marketing².

The notion of “brand” was born from the need for publicity for products and services, and from here the multitude of representations and definitions. Most definitions incorporate those elements that make possible in man’s mind the association of an image with a product, a cultural, a social or sports organization or a country. Among the numerous definitions of the brand, we believe that the one given by Sergio Zyman, former chief marketing officer of the Coca-Cola Company, founder of Zyman Marketing Group, a top firm in strategic consultancy in the USA, can offer a good basis for the understanding of what it is or especially what it is not, because the first studies and applications of the impact of a brand on a person/consumer were done on the market.

Later, the brand theories and practice were used in other domains as well, from culture and sports to politics and concentrated on the country image, but not only. Because anything can be transformed into a brand, not only the products and services offered by a company, as Zyman states, who gives the example of the branding of the European Union and other Western countries which have long been part of it. Thus, Zyman observes that, although it appears to be simple to define the notion of brand, it proves to be a complicated endeavor, and he notices in order to formulate a good definition one needs to take into account its defining elements. Among these, the most important ones are³:

- the brand involves the sum of all the experiences that a consumer/customer has with the product and the company producing it;
- the brand represents a collection of functional and emotional benefits, attributes, experiences, uses, images and symbols;
- the brand represents the relationship of the company with the preferences, desires and needs of the consumers;
- the brand is what makes constant customers come back;

¹ Bernard L. Simonin, “Nation Branding and Public Diplomacy: Challenges and Opportunities”, in *The Fletcher Forum of World Affairs*, Vol. 32:3, Special edition 2008, p. 24.

² Luminița Nicolaescu (coordinator), *Imaginea României sub lupă! Branding și rebranding de țară*, available online at: <http://www.biblioteca-digitala.ase.ro/biblioteca/pagina2.asp?id=cap1>, p. 1, accessed on September 17, 2018.

³ Andrei Stoiciu, *Cum să convingi un milion de oameni. Manual de marketing și publicitate*, Ziua Publishing House, Bucharest, 2006, pp. 62-65.

- the brand represents the manner in which a significance is offered to the product or service supplied by the company;
- the brand represents the most valuable asset of a company.

One of the best known definitions of the concept of brand belongs to Philip Kotler, who believes that this is the “name associated with one or more elements from the product line that is used to identify the character source of the item”⁴. In its turn, the American Marketing Association focuses on approximately the same variant, also involving the concept of “*name, symbol, and goods*”: name, term, design, symbol or any characteristic that identifies the good or service of a seller, distinctive of other sellers. The legal term for make is *trademark*. With the help of a make an element, family of items or all the items of a seller can be identified. If it is used for the whole firm, the preferred term is the commercial name. The brand also means a personal experience of the customers, represented by a collection of images and ideas; it often refers to a symbol like the name, logo, slogan or design. The recognition of the brand is done by accumulating experiences with the specific product or service, both directly linked with its use and also under the influence of publicity, design or media discourse. A brand often includes an explicit logo, fonts, and combinations of color, symbols, sounds that can be developed to represent implicit values, ideas and even personalization⁵. According to Kotler, beyond the promise of a valuable experience, the objective of the brand in itself envisages the creation of a differentiation between products of the same type.

In order to make a systematic analysis of these definitions, one can use a framework proposed by Chernatony and Riley (1988) who analyzed over one hundred studies and articles written by theoreticians and practitioners from various fields, from marketing to culture, about what a brand is. The authors of this study reached the conclusion that the definitions of the brand/make can be classified in 12 themes, as follows⁶: brand as *logo*, brand as *legal instrument*, brand as *company*, brand as *design*, brand as *risk reducing factor*, brand as *carrier of identity*, brand as *image in the mind of the consumer*, brand as *system of values*, brand as *image of a personality of reference in a domain of social life*, brand as *relationship*, brand as *added value* and brand as *entity that evolves*. There is a lively debate in our country and abroad about the similarities and differences between make and brand. Some put the equality mark between the two terms, because they try to translate the notion of brand by using a Romanian word, other believe that there are major differences in significance between the two notions and, consequently, we have to accept this neologism in the Romanian language.

The mark - registered or not - is the unique symbol that differentiates the offer of a seller from the others. Any company can register a mark, but this does not have to automatically become a brand, because the brand, beside the mark, also includes emotional connections, experiences that occur between the product and its consumers. We must also add to these elements the country image, both as definition and also as product/representation in the collective mind, because a product most often enjoys fame when associated with a country. The Swiss watches, French cheese, Russian vodka, although this drink is produced in almost all European countries, French perfumes etc. The definition of the country image also differs among authors, and also depending on the perspective of the discipline attempting to provide it. Scientific domains like sociology, psychology, philosophy approached the problem of image differently as early as Antiquity. Each one of these dealt with a certain side of image

⁴ Philip H. Kotler, *Marketing Management: Analysis, Planning, and Control*, 8th ed. Englewood Cliffs, Prentice-Hall, Inc. NJ, 1991, p. 442.

⁵ American Marketing Association, available online at: <http://www.marketingpower.com/mg-dictionary-view329.php>, accessed on September 02, 2018.

⁶ Leslie Chernatony, Francesca Dall’Olmo Riley, “Defining a brand: beyond the literature with experts’ interpretations”, in *Journal of Marketing Management*, No. 5, 1998, pp. 417-443.

and thus the notion received different definitions. We can thus explain why we have a multitude of definitions for the concept of country image. There are authors who associate the term with a “broad perspective constituted of variables, such as specific economic and political products, historical events, traditions, level of industrialization and technological development”⁷. According to others, “the image of a country results from its geography, history, proclamations/discourse, art, music, its renowned personalities and other characteristics. The entertainment industry and mass-media play an extremely important role in modelling the perception of people about places, especially those seen as negative. Not only categories of products, like perfumes, electronic devices, precision instruments, wines, cars, software are strongly identified with certain places, but also social diseases, like epidemics in the USA, political revolts, breaches of human rights, attacks on the environment, racial conflicts, economic turbulences, poverty and violent crime. All these have repeatedly and strongly been associated with certain places”⁸. Each nation has an image that can vary more or less in time and space. This image influences the perception of consumers with regard to the products and services of that country, the perception of investors on the country as a place for business, the expectations of tourists and the attitudes of the public. The image is tightly connected with another reality, identity, the only one, according to diplomat Mircea Malita that can keep a nation *standing*⁹. In Bernard L. Simonin’s opinion, “The identity of a nation is what a country thinks it is (or wishes to be). This identity is projected to the rest of the world through branding and communication efforts in order to attract tourists and foreign direct investments, to stimulate exports and to conduct an effective public diplomacy”¹⁰.

Thus, the *brand image* refers to the current perception of the country on the “market”, while the *brand identity* corresponds to the perception that the country tries to create. With regard to mentality and management orientation, *identity* has an internal and production accent, while *image* is concentrated toward the outside and on the market. The creation or re-modelling of an identity is an attempt to influence the image.

The gap that may exist between identity and image reflects a disconnection between the initial intention and the perceived reality. When monitored in time, it helps a campaign to remain on the right track. In order to achieve a communication campaign, the identity of a nation must emphasize a reality that resonates with people both within and outside the country. In order to understand a brand and its anatomy, it is useful to chart its different elements, characteristics and associations on a simple continuum composed of attributes, benefits and the essence of the mark. This continuum reflects an evolution from tangible to intangible, from multiplicity to singularity, from concrete to abstract, from social experience to cultural and spiritual activity and the experiences of a human community. Professor Constantin Schifirnet believes that: “The matter of identity gained new significances due to the development of the relations between the European Union and its member states. The identity of the Romanians is shaped in the same manner, as a fundamental element in the research of the Europeanization of the Romanian society, of Romania’s processes of integration in the EU structures. The joining of the EU undoubtedly requires the re-thinking of several aspects of the national, and the national identity is an essential one”¹¹.

⁷ J.P. Bannister, J.A. Saunders, “UK Consumers’ Attitudes toward Imports: The Measurement of National Stereotype Image”, in *European Journal of Marketing*, Vol. 12, No. 8, 1978, p. 562.

⁸ Philip Kotler, David Gertner, “Country as a brand, product and beyond: A place marketing and brand management perspective”, in *The Journal of Brand Management*, April 2002, p. 251.

⁹ Acad. Mircea Malița, “Identitate națională, interes national”, in Nicolae Melinescu, *Nevoia de românism*, Cetatea de Scaun Publishing House, Târgoviște, 2015, pp. 60-61.

¹⁰ Bernard L. Simonin, *op. cit.*, p. 22.

¹¹ Constantin Schifirnet, “Identitatea românească în contextul modernității tendențiale”, in *Revista Română de Sociologie*, serie nouă, anul XX, nr. 5-6, București, 2009, p. 461.

The relations between national identity and national brand must be understood and deciphered so that a country may build and maintain a desirable image in international politics. In the opinion of specialists, the *identity of a brand* creates a relation between the brand and consumers, proposing a value that has functional and emotional benefits, and its image represents perceptions of a brand reflected by the associations of the brand in the minds of the consumers¹². The image of a brand creates the perception of a brand in people's minds. The image of a brand is a reflection from the mirror (although not always accurate) of the personality of a brand or product/service/place. It represents *what people believe* about a brand - their thoughts, feelings, expectations. A positive and strong image can bring strong and distinctive competitive advantages for a place or country, because of the fact that "brands are part of those contemporary plural systems that are sources of symbolic legitimacy in the post-modern society"¹³.

The notion of identity is a fluid one, with many contradictory meanings and constantly re-negotiated. Understanding the notion of identity is of stringent importance due to two processes profoundly mark life and the direction of evolution of a nation – supra-state and economic integration on the one hand, and the processes of globalization on the other hand. In this context distortions may appear in the relations between a state and the members of the society, in the sense that these "feel estranged from a state that no longer represents them or does not help them build a sense in their life. Consequently, they tend to build these identities on historical foundations. Identity is a modality to build sense in people's lives in a moment when the reason to exist of modern states seems to disappear. In this sense, people aspire towards much more than market economy. We may indeed say that the state is an agent for globalization than a people's agent"¹⁴.

Academician Eugen Simion notices that the integration and globalization processes made "the old type of identity discourse (also named the national specificity discourse), that which places on two columns people's virtues (good qualities) and shortcomings, a people's inertia of the spirit, be abandoned". We also add to these the evolutions of the last "23 years of totalitarianism, twenty years of chaotic transition and, presently, due to an intelligentsia that rejects national values because Ceausescu's regime encouraged national-communism, after all these, the feeling of Romanian identity based on the idea of space (country, land), people, tradition, way of being etc. is on the decline... To be Romanian is not always, as observed, a reason for pride, for some it even is a sentiment of culpability"¹⁵.

One of the strongest identities, both at individual and at group or community level, remains the national identity. The data through which the members of a national community identify themselves with the nation define a whole range of similarities of interests, beliefs or life norms, shared by all the people who belong to that group. "Identity comes from individuals - former diplomat Mircea Malita assures us - from culture: how you were born, the language that you speak, the culture that you support, who your ancestors are, the history that you carry with yourself, the songs, and traditions, all these mean the culture that defines a person who in their turn learns who they are in the world"¹⁶. Identity can become a stereotype in everyday discourse, although the national identity presents difficulties of conceptualization. The national identity expresses attitudes, mentalities and collective behaviors resulting from the belonging of individuals to a national state, an institution which "*incorporates the*

¹² Luminița Nicolaescu, *op. cit.*, p. 28.

¹³ Marian Petcu (coordinator), *Dicționar enciclopedic de comunicare și termeni asociați*, C. H. Bech, Publishing House, 2014, pp. 300-301.

¹⁴ Manuel Castells, "Globalisation and identity. A comparative perspective", in *Transfer*, no. 56/2006, available online at: https://lull.cat/IMAGES_175/transfer01-foc01.pdf, p. 57, accessed on August 08, 2018.

¹⁵ Acad. Eugen Simion, "Însemnări rapide despre identitatea românească", în *Academica*, nr. 1/2016, p. 5, available online at: [www.acad.ro/com2013/doc/d0404-ZiuaAR-Eugen Simion.doc](http://www.acad.ro/com2013/doc/d0404-ZiuaAR-Eugen%20Simion.doc), accessed on May 21, 2017.

¹⁶ See Nicolae Melinescu, *op. cit.*, p. 67.

national identity” and aims to “*defend*”, “*help*” the citizens¹⁷. The modernist and post-modernist doctrines put under discussion the opportunity of the national state, setting off from the premise of the integration of national collectivities in supranational structures like, for example, the European Union. If, for the national states with a long history, national identity is indisputable, the nation states emerged after the Second World War are confronted with adversities regarding their own national identity¹⁸.

The role of the national image in international relations can be explained in the light of the power theory, of the perspective of social psychology and the practice of public diplomacy. In fact, the national image is part of the soft power of a state. It is believed that it is a public good that can generate either a favorable environment or an unfavorable one for the society and state in international relations. The reputation of a nation can be, politically and economically, an “asset” or, to the contrary, “ballast”. A positive reputation helps countries to achieve foreign policy objectives, to attract foreign investments, tourists etc. In an effort to make an inventory of country images in international politics, the essence of the brand appears as a basic value, one that is easy to understand and appreciated by the target audience; it corresponds with the functions of the brand, with its role in international politics. A favorable national image can sometimes be a political attribute more valuable than its territory or its natural resources¹⁹.

This function of the national image becomes more important nowadays because nations wish to participate more actively in the global affairs and to consolidate their status on the international stage. This explains why responsible governments make great efforts and allocate more and more resources in order to discover the way in which the international public perceives their country and aim to develop more effective strategies to manage their national image. These efforts are all part of the public diplomacy. The lack of interest in managing the image of a nation that is in political ethnic or religious crisis or that has economic weakness can discourage foreign investments, to provoke future crises and even military conflicts²⁰.

The idea according to which the perception of a nation in international politics depends solely on the effectiveness of the country image management must not be made absolute, as Simon Anholt, the “father” of the *nation brand* theory, advises. In a study published only a couple of years ago, Anholt shows that “if a country is seriously preoccupied to improve its international image, it should concentrate on developing and commercializing goods rather than on following a branding chimera. There are no shortcuts. Only a steady, coordinated and uninterrupted flux of useful, remarkable and high-class ideas, products and practices can gradually increase the international reputation of the country that produces them.”²¹ There is no way of building a brand capital based only on communication methods and strategies. Such an approach is “not only incorrect, but also unjustified - there simply is no such method. The good products and services produced by a good corporation acquire a positive image of the mark which eventually make the company to not be rejected and become its main capital. Similarly, the products, services, culture, tourism, investments, technology, education, business, people, policies, initiatives and events produced by a country also obtain a positive image of the country, its main asset”²².

¹⁷ *Ibidem*.

¹⁸ Constantin Schifirneț, *op. cit.*, p. 464.

¹⁹ Eytan Gilboa, “Searching for a Theory of Public Diplomacy”, in *The Annals of the American Academy of Political and Social Science*, vol. 616, no. 1 (2008), pp. 55-76.

²⁰ Bernard L. Simonin, *op. cit.*, p. 2.

²¹ Simon Anholt, “Beyond the Nation Brand: The Role of Image and Identity in International Relations”, in *Exchange: The Journal of Public Diplomacy*, Vol. 2 [2013], Issue 1, Art. 1, pp. 7-8, available online at: <https://surface.syr.edu/cgi/viewcontent.cgi?article=1013&context=exchange>, accessed on October 02, 2018.

²² *Idem*.

2. Public diplomacy and the country brand management

The efforts at the level of an organization/institution/nation to permanently improve its image are also conducted, as emphasized above, through means and techniques specific to public diplomacy, in the light of a final aim, that to promote the image of the state.

An effective use of public diplomacy to improve and maintain a positive image for the country also requires an understanding of both the similarities and differences between the concepts of national brand and public diplomacy, between the roles and functions of each one of them.

Public diplomacy aims to promote a political interest and is mainly oriented towards foreign citizens and elites that can influence decisions by foreign governments; the main actors that are targeted are governmental organizations, the Ministry of Culture, the Ministry of Foreign Affairs, but equally the public opinion. The brand of a nation aims to promote the economic interest and is oriented towards the masses of consumers of the products and services that it promotes. It is mainly practiced by actors such as trade and tourism commissions, chambers of commerce etc. As a result, the national brand remains mainly studied, analyzed, practiced and researched by those who actively work in marketing, while the public diplomacy is linked with international relations and human security²³. In short, the main difference between public diplomacy and national brand is that the former views society as the community of its citizens, while the latter perceives society as a community of consumers. Public diplomacy implies cultural, educational and informational exchanges in order to encourage mutual understanding and dialogue and mainly focuses on the content of the message. Due to its nature, the branding activity is a lot more preoccupied by image than content and so it is largely based on visual “products” and symbols that are transmitted through the media. Furthermore, as noted by G. Szondi, “the branding of a nation tries to identify unique elements and to separate us from «others», while public diplomacy tries to identify unifying elements”²⁴. Different strategies are dictated by different objectives. Mainly following to promote the political interest – to create a receptive environment for its foreign policy objectives –, public diplomacy must identify common values in order to unite and attract people. From another perspective, because the branding of a nation is focused on economic interests – attraction of foreign investments and tourists –, it must emphasize the unicity of the state in order to increase its competitiveness on the global market.

Beyond some relative differences, there also are elements that bring the brand and public diplomacy on the same level. They are similar in many respects. The similarities include symbol and image management, the building of relationships and the use of the mass-media²⁵. As a nation must establish a good reputation for itself, the diplomatic efforts must make valuable use of the public relations traditions of the “*communication and persuasion*” strategies in order to build, maintain and manage reputation in time²⁶. Professor Jun Wang from the University of Minnesota sees the branding elements as instruments to manage the image of a nation. This is due to the fact that, like branding, public diplomacy emphasizes the necessity to build relationships by involving an interdependence between groups with a

²³ Gyorgy Szondi, “Public Diplomacy and Nation Branding: Conceptual Similarities and Differences”, in: Virginie Duthoit, Ellen Huijgh, *Discussion Papers in Diplomacy*, Netherlands Institute of International Relations „Clingendael”, 2008, pp. 12-13.

²⁴ *Idem*, pp. 17-18.

²⁵ Alina Dolea, Adriana Țăruș, *Branding România. Cum (ne) promovăm imaginea de țară*, Curtea Veche Publishing House, Bucharest, 2009, p. 31.

²⁶ J. Wang, “Effectively Managing National Reputation: Strategic Public Diplomacy Revisited”, in *International Communication Association Conference*, New York, 2004, p. 123, available online at: <https://www.icahdq.org/page/PastFuture>, accessed at September 03, 2018.

“certain level of reciprocity”²⁷. This vision is borrowed by other theoreticians in the field who believe, for example, that the positive attributes associated with a nation may be derived from its good governance and would lead to attracting foreign investments²⁸.

The need to manage the reputation of a nation has been growingly linked with an increased role played by public diplomacy as an instrument to promote national interests through soft means, with the observation that, even in case of a growth in globalization, there may appear phenomena related to the “nationalism of the consumer”. This phenomenon refers to the “invocation by consumers of the collective identity, based on their citizenship, when they accept or reject products or marks from other countries”²⁹. The deterioration of the reputation of a nation can affect the “perception by the consumers of the products and services of a certain country”³⁰. The recent case of the Russian Federation, after the annexation of the Crimean Peninsula, can be a relevant example in relation to a decrease in exports to European markets.

In this sense, a credible and attractive brand can generate a series of positive effects for a nation/country and lead to an increased effectiveness of its public diplomacy activities. Firstly, a successful branding campaign attracts foreign investments and tourists which contribute to the economic development and modernization of the state. Secondly, the branding helps to combat negative perceptions and stereotypes. The public diplomacy campaign *Piazza di Romania* conducted in Italy on 28 September - 9 October 2008 under the slogan *Romania: Un mondo da scoprire* (Romania – a world to be discovered) can be considered a successful one after a long period of image crisis, following the Mailat case (after the name of a man who took the life of a woman) which generated ample manifestations of hostility towards Romanian migrants in Italy. The campaign was proactive and generated access for the Italian public to events to promote Romania in three important squares in Turin, Milan and Rome³¹. Nowadays, Romanian migrants in Italy are no longer perceived through the prism of stereotypes amplified by reprehensible acts by citizens with a tendency to commit criminal acts.

The role of nation branding and public diplomacy campaigns must not, however, be overestimated. For example, the change of Spain’s national image is the result of fundamental changes in its political, economic and social systems, and not the direct result of national branding campaigns. The brand of a new democratic state, appeared after the demise of Franco’s regime only helped to emphasize and show to the outer public the achievements of the new authorities in the democratization of the state. In other words, a successful national branding campaign requires a favorable economic basis and internal environment. In this sense, the national branding is similar to public diplomacy, which can be successful only when words are supported by real actions and policies in the political and administrative fields or by excellent products and services in the economic, touristic and educational fields. In these domains we must “find that something which sells and attracts”³². The problems that generate a negative image of a country in international politics, like corruption or bad governance, if we refer to the political or administrative side, the weak quality of products and services offered for consumption internally and internationally cannot be solved by a public diplomacy campaign and a rebranding of the country image and cannot be the task of only the government of NGOs and other civil society organizations.

²⁷ *Idem*, p. 17.

²⁸ Alina Dolea, Adriana Țăruș, *op. cit.*, p. 39.

²⁹ J. Wang, *op. cit.*, p. 223.

³⁰ *Ibidem*.

³¹ Alina Dolea, Adriana Țăruș, *op. cit.*, pp. 89-101.

³² *Ibidem*.

The improvement of the country image must be in the attention of all Romanians who work, travel or represent their country in European and Euro-Atlantic institutions, but also of those at home who can contribute by raising the quality of products, services and prosperity. The successful hosting of a mega-events can bring enormous benefits for the image of the host country. The opportunity presented by a football event such is Euro Cup is particular interest to countries that neither have a strong brand identity and reputation nor have an image that is either misplaced or unhelpful to its broader developmental aims. The Euro 2020 football championship will take place in 12 European cities, including Bucharest. The National Arena will host three group-stage matches and one in the last 16 phase of the competition. Recently the prime ministers of Bulgaria, Greece and Romania and the president of Serbia say their countries will make an official bid to host the 2030 World Cup in stadiums across the four countries. The idea was announced on the sidelines of a regional meeting in the Black Sea resort of Varna.

The main promoting agent of the country image and promoter of public diplomacy should be the ordinary citizen, Positive perceptions and a strong reputation is the key currency of brands³³. Practitioners of the discipline of PR and communications are all too aware that the strongest messages and exciting creative solutions are not sufficient to ensure positive perceptions of a brand, if these do not match reality. Therefore each citizen should be an actor in the brand identity building and equally a consumer. The behavior of each citizen impacts on how the nation brand is perceived. To ensure that each citizen is aware of the impact they may have on the reputation of the Romania nation brand and how it is perceived, the Romanian govern should develop and is implementing a flagship domestic program. A call on citizens to play their part to build Romania's reputation. It is a call for citizens to be aware of their impact on how the country is perceived. In the long term, we are confident that when all citizens become aware of their role in the nation brand building project, our behavior will begin to match the messages we communicate both domestically and internationally. According to Alexandru Muraru "Romania would be totally different, and the country brand would not be an obsession, if Romanians would believe more in the value of Tonitza's paintings, Stavropoleos Church, Slavonic manuscripts or Mateiu Caragiale's writing. Only when Romania values will be truly appreciated it will be possible to promote the heritage or invest in (self-) awareness and values presentation"³⁴.

Conclusions

On the whole, public diplomacy and nation branding should be regarded as complementary concepts, rather than competitive ones. Firstly, nation branding is a perfect choice for states that are successful on an internal level but are too small to be visible in the whole world, having in mind that public diplomacy requires a lot of resources. Secondly, even large states with a successful public diplomacy should engage in nation branding that contributes to maintaining a distinctive identity and cultural heritage in a globalized world. Thirdly, because the modern society is more and more influenced by mass-media and consumption (by images, products, "marks", etc.), the nation branding, by selling images, can become even more effective than public diplomacy in the near future.

³³ See Candace L White, "Brands and national image: An exploration of inverse country-of-origin effect", in *Place Branding and Public Diplomacy*, Volume 8, Issue 2, May 2012, pp 110–118.

³⁴ Quoted by Bianca-Florentina Cheregi, "News Discourses on Nation Branding in Post-Communist Romania: Frames and Function Frames", in *BRAND. Broad Research in Accounting, Negotiation, and Distribution*, volume 8, issue 2, 2017, p. 29.

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A POSSIBLE ROMANIAN-AMERICAN NAVAL STRATEGIC PARTNERSHIP

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Abstract: *How can the United States increase the responsiveness of US forces to reinforce the South-Eastern NATO flank in the Black Sea? Geopolitical changes have led to calls for the necessity to update the Montreux Convention. These restrictions can be avoided in this situation if the US would rent or lease at a reasonable price warships to the Romanian Navy that fly the Romanian flag, and are operated by a Romanian-American crew. Montreux Convention rules may be avoided by building an innovative partnership, a solid and reliable agreement between US Navy and Romanian Navy. Subsequently, a Multinational Task Group composed of American, Romanian, and Black Sea littoral countries' ships can be consolidated. The result will be beneficial to the US, NATO, EU, and Black Sea countries. This naval partnership has to be created to support Aegis Ashore Missile Defense System Deveselu, to rebuild a military and security power in the region, and change the balance of power.*

Keywords: *Montreux Convention, freedom of navigation, strategic partnership.*

Introduction

The Black Sea is one of the limited open seas that the US cannot sail in freely because of the Montreux Convention. With Romanian integration into NATO and the EU, both organizations have sought to enter the Black Sea. The US and the EU share common objectives of maintaining peace and encouraging democratic and economic reform. The EU supports regional development and encourages the peaceful resolution of conflicts in the region with its Black Sea Synergy¹. In accordance with US Department of State, Romania has agreed to host elements of the US Phased Adaptive Approach to European missile defense. The two countries signed a ballistic missile defense agreement in 2011, allowing the deployment of US personnel, equipment, and anti-missile interceptors to Romania. In October 2014, the US Navy formally established Naval Support Facility - Deveselu². Thus, the sale or lease of ships would fit well into this infrastructure.

In support of my thesis, the White House has issued a press release that states it needs to increase the responsiveness of US forces to reinforce NATO, such as the prepositioning of equipment and improvements to other reception facilities and infrastructure in Europe, in the

¹ "Black Sea Synergy", European Union External Action, available online at: http://eeas.europa.eu/blacksea/index_en.htm, accessed on November 02, 2015.

² Bureau of European and Eurasian Affairs, Fact Sheet "US Department of State, Diplomacy in Action", *US Relations with Romania*, October 2, 2015, available online at: <http://www.State.Gov/R/Pa/Ei/Bgn/35722.Htm>, accessed on November 1, 2015.

same time with more persistent deployments to the Black Sea³. Russia's supremacy in the Black Sea becomes critical for restoring its East European and Eurasian dominion, as well as projecting power toward the Southern flank of NATO. Russian Black Sea Fleet plays a significant role in Russian anti-NATO strategy and uses the Black Sea, on its benefit, to control ports and Sea Lanes of Communications (SLOCs) and to prevent NATO and US from projecting security. NATO and the US ships have to contain Russian ships with the mission to threaten and to obstruct the trade and gas transport of states not in compliance with Russia's national ambitions, and give Moscow an enhanced ability to exploit fossil fuels in the Black Sea's continental shelf⁴.

This kind of transfer has happened before in recent US Naval history when ships from its command were transferred to other navies like Mexico⁵, Lithuania, Turkey, Taiwan⁶ (in accordance with section 516 of the Foreign Assistance Act of 1961 (22 USC 2321j)). The USA authorized the transfer of ships to other allies or partners, such as Bahrain, Egypt, Oman, Turkey, and UAE (1995-1996), Argentina, Brazil, Chile, Greece, Mexico, Philippines, Turkey, and Venezuela (1999). The President of The United States is authorized to transfer vessels to foreign recipients on a grant basis under section 516 of the Foreign Assistance Act of 1961 (22 USC 3 2321j)⁷. The Naval Vessel Transfer Act of 2013 authorizes the transfer of the frigates *USS Curts* and *USS McClusky* to Mexico on a grant basis and the sale of the frigates *USS Taylor*, *USS Gary*, *USS Carr*, and *USS Elrod* to Taiwan⁸.

The United States faces challenges in Syria and Ukraine and has to be prepared for the geo-strategically chess game with Russia. In order to defend its interests it has to increase its naval presence in the Black Sea. A strategy should solve both conflicts. And this strategy has to be supported by a permanent naval presence in the Black Sea. This increase in US-Romanian naval capability enhances strategic security stability in the Black Sea region as well as the Eastern Mediterranean.

1. Why the US Navy has to enhance its presence in the Black Sea?

1.1. Background information and challenges of the Montreux Convention

Every time a tense situation occurs in the Black Sea, discussion reappears about international regulations on the right of movement of military vessels. It is well known that Turkey is the absolute master of the Bosphorus and Dardanelles straits. In this regard, any strategic operation planning on the Black Sea must consider the Montreux Convention. This Convention, which has been in effect more than 82 years, has a controversial diplomatic, legal, and operational history along with many challenges. According to the Convention, merchant vessels enjoy the freedom of passage, while vessels of war are subject to some restrictions which vary depending on whether these ships belong to Black Sea littoral States

³ Office of the Press Secretary, "Fact Sheet: European Reassurance Initiative and Other US Efforts in Support of NATO Allies and Partners", *The White House President Barack Obama*, June 03, 2014, available online at: <https://www.whitehouse.gov/the-press-office/2014/06/03/fact-sheet-european-reassurance-initiative-and-other-us-efforts-support>, accessed on October 27, 2015.

⁴ Janusz Bugajski, Peter B. Doran, *Center for European Policy Analysis*, February 2016, available online at: http://cepa.org/files/?id_plik=2096, accessed on April, 25, 2016.

⁵ *113th Congress, S.1683 (2013-2014)*, December 8, 2014, available online at: <https://www.congress.gov/bill/113th-congress/senate-bill/1683>, accessed on March 29, 2016.

⁶ *114th Congress 1st Session, H. R. 4154 (2015-2016)*, December 2, 2015, available online at: <https://www.congress.gov/bill/114th-congress/house-bill/4154/text>, accessed on March 29, 2016.

⁷ "Ship Transfers/Transfer of Naval Vessels", *Global.Security.Org*, available online at: <http://www.globalsecurity.org/military/systems/ship/transfer.htm>, accessed on April 1, 2016.

⁸ Christopher P. Cavalas, *US Frigates Approved for Transfer – Finally*, December 19, 2014, available online at: <http://www.defensenews.com/story/defense/naval/ships/2014/12/19/navy-frigates-ships-taiwan-china-mexico/20642841/>, accessed on January 17, 2016.

or not⁹. Vessels of war belonging to non-riparian states are subject to specific restrictions including maximum aggregate tonnage and duration of stay in the Black Sea. The most important aspects that limit free access to US ships are: aircraft carriers cannot pass into the Black Sea; only submarines belonging to riparian states can pass, for rejoining their base in the Black Sea for the first time after their construction; vessels of war belonging to non-riparian states cannot stay more than 21 days in the Black Sea.

The Montreux Convention must be reviewed every 20 years, so the year of 2036 will be the soonest available time to make any changes. An overview of possible alteration to the Montreux Convention could refer to articles 14 and 18, which regulates maximum tonnage, the number of foreign ships which are passing from the straits at the same time and total tonnage. Strategic balance in the Black Sea will be changed in US favor if only one of the above-mentioned amendments will be made.

The USA, Russia, Turkey, the rest of the Black Sea riparian countries, NATO, and the EU will lose something and win something. Russian and the US interests are in total contradiction. Turkey is trapped between Russia, and the US. The US will have more ships in the Black Sea, but no air carriers and submarines. As a result of increasing US warships in the Black Sea, the US-Russia relation will experience more tension. Russia has to face its decline in Black Sea. It will be forced to keep more naval assets than usual in the Black Sea. In this way, its naval presence in other maritime areas will be decreased¹⁰.

1.2. Freedom of navigation of US ships in the Black Sea

US naval history has many reference points in analyzing the limited possibility to balance power in the Black Sea and Montreux Convention limitations. On December 9, 1968, the destroyers *USS Dyess* and *USS Turner* cruised off the coasts of the Soviet Union, closely shadowed by Soviet vessels. The Soviets charged that the maneuvers were a “provocative sortie”¹¹. On August 1979, as the destroyers *USS Caron* and *USS Farragut* were conducting “show the flag” exercises, Soviet warplanes including the Backfire bomber, staged more than 30 mock missile attacks¹². On March 13, 1986, *USS Yorktown* and *USS Caron* have entered the Soviet territorial waters, approaching within six miles of the coast, for two hours and 21 minutes¹³. On February 12, 1988, *USS Yorktown*¹⁴ was deliberately shouldered by Soviet *Krivak I* FFG-0811 (*Bezzavetny*). It sustained minor damage to the hull and two Harpoon missiles were damaged and unusable¹⁵.

On August 2008 during Russian – Georgian War it was difficult to find the reason why Turkey was within its rights under the Montreux Convention in refusing the free access

⁹ Traduction - Translation Convention Regarding The Regime Of The Straits Signed At Montreux, July 20, 1936, available online at: http://sam.baskent.edu.tr/belge/Montreux_ENG.pdf, accessed October 30, 2015.

¹⁰ Bulent Gokcicek, *The Montreux Convention regarding the Turkish Straits and its importance after the South Ossetia war*, Naval Postgraduate School Monterey, California, March 2009, available online at: <http://www.dtic.mil/dtic/tr/fulltext/u2/a496759.pdf>, accessed on April 1, 2016.

¹¹ *The Daily Banner*, Greencastle, Putnam County, 9 December 1968, Hoosier State Chronicle contributed by DePauw University Libraries, available online at: <https://newspapers.library.in.gov/cgi-bin/indiana?a=d&d=TDB19681209-01.1.2#>, accessed on October 20, 2015.

¹² “Santa Cruz Sentinel from Santa Cruz”, *AP Washington*, California, August 10, 1979, available online at: <http://www.newspapers.com/newspage/62645606/>, accessed on October 15, 2015.

¹³ W. E. Butler, “Innocent Passage and the 1982 Convention: The Influence of Soviet Law”, *American Journal of International Law*, April 1987, available online at: <http://iilj.org/courses/documents/W.E.Butler.InnocentPassageandthe1982Convention.pdf>, accessed on October 20, 2015.

¹⁴ *USS Yorktown* and *USS Caron* were conducting FON operations in the Black Sea off the Crimean coast of the Soviet Union.

¹⁵ John Norton More, Robert F. Turner, “Reading on International Law”, *International Law Studies*, volume 68, Naval War College, 1995, p. 1, available online at: https://archive.org/stream/readingsonintern68moor/readingsonintern68moor_djvu.txt, accessed on October 19, 2018.

of the 70,000-ton hospital ships. There is no doubt that Turkey blocked their free access.¹⁶ Moscow has accused US ships not carrying humanitarian aid for Georgians as violating the provisions of the Convention.

1.3. The US Naval Presence in the Black Sea

During the Summit in Wales in 2015, President Obama announced the initiative of a naval partnership between the US, Romanian, and Bulgarian Navies in the Black Sea. Romania is looking forward to continuing this cooperation¹⁷. Obama reaffirmed that the US “agreed to be resolute in reassuring our Allies in Eastern Europe” and “We’ll increase NATO’s presence in Central and Eastern Europe with additional equipment, training, exercises and troop rotations. And the \$1 billion initiative that I announced in Warsaw will be a strong and ongoing US contribution to this plan”¹⁸. From this perspective, it is very critical for the US to have permanently at least one ship in the Black Sea in order to balance the naval situation, to sustain the Deveselu BMD, and to create a more confident and secure environment. On February 2015, in an interview to *European Times*, the Minister of Foreign Affairs of Romania discussed Romania’s foreign policies and diplomatic challenges. He mentioned that the US considered it very important to have troops in Romania for the reassurance measures. The period 2014-2017 was characterized by a very consistent US naval presence in the Black Sea, and he said the US will continue this cooperation.

1.4. The Black Sea international context

Russia’s seizure of Crimea has allowed it to show its force projection capabilities in the Black Sea with the positioning of powerful anti-ship missiles, air defense systems and naval aviation assets in the newly annexed peninsula. For instance, in addition to Su-24 strike aircraft, the Russians have also begun to deploy relatively advanced Su-30 multirole aircraft to Crimea. Moscow will also build a base in Novorossiysk that will serve as the center for its naval presence in the Black Sea¹⁹. After Crimea annexation, Sevastopol became a strategically, a major military, and geopolitical power projection hub of Putin’s strategy.

Because of the Dardanelles and Bosphorus Straits access, on the one hand, Turkey can rapidly concentrate its naval power by shifting vessels from the Mediterranean Sea to the Black Sea. This gives the Turkish Navy a key advantage that the Russian Black Sea Fleet could be kept split. The combined Turkish Navy ships from the Aegean Sea and the Black Sea Fleet could count about 13 submarines, 16 frigates, and 8 corvettes²⁰.

On the other hand, Turkey effectively resisted pressure to extend NATO’s Operation Active Endeavour from the Mediterranean Sea into the Black Sea. Turkey (and Russia) resisted suggestions to enlarge it into the Black Sea, which would have essentially violated the Montreux Convention. Since March 1, 2004, Turkey initiated Operation Black Sea Harmony, in order to perform a similar task to the NATO-led Operation Active Endeavour in the Black

¹⁶ David Morison, “Turkey restricts US access to the Black Sea”, David Morrison blog, available online at: <http://www.david-morrison.org.uk/us/turkey-restricts-us-access.htm>, accessed on October 20, 2015.

¹⁷ European Times, “Bogdan Lucian Aurescu, Minister of Foreign Affairs of Romania, discusses Romania’s foreign policies and diplomatic challenges”, *Ministry of Foreign Affairs*, February 18, 2015, available online at: <http://www.mae.ro/en/node/30781>, accessed on November 02, 2015.

¹⁸ Barack Obama, “Remarks by President Obama at NATO Summit Press Conference”, *Whitehouse*, September 05, 2014, available online at: <https://www.whitehouse.gov/the-press-office/2014/09/05/remarks-president-obama-nato-summit-press-conference>, accessed on January 10, 2016.

¹⁹ “Russia Faces Obstacles to Bolstering Its Black Sea Fleet”, *Stratfor*, September 24, 2014, available online at: <https://www.stratfor.com/analysis/russia-faces-obstacles-bolstering-its-black-sea-fleet>, accessed on October 12, 2015.

²⁰ “Turkish Naval Forces”, Turkish Navy, available online at: http://www.dzkk.tsk.tr/icerik.php?dil=0&icerik_id=40&pltfm=1, accessed on October 29, 2015.

Sea. Regardless, Russia and Turkey are not going to reopen the dialog about Montreux Convention due to the current power balance in the Black Sea. From the Russian perspective, it is essential to keep the Black Sea closed, away from the strategic powers (EU, NATO, and the United States). This approach brought the countries together in the context of defending the Black Sea's status and the Montreux Convention. Both countries frequently express that the Montreux Convention should not be changed. The issues related to the Black Sea should be resolved by coastal states in cooperation, and foreign powers should not be involved.

In the Black Sea, Russia and Turkey are the strongest powers and both want to play a major role. Turkey not only wants to remain under the NATO umbrella, but increasingly claims that it is a valued player not only as a regional power in the Black Sea, but also as an extremely skillful player at the confluence of three worlds – Europe, Middle East, and Asia.

On September 16, 2018, Romania marked six years since the adoption and signing of the “Joint Declaration on the Strategic Partnership for the 21st Century between Romania and the USA”. Both countries have identified the following areas for strengthened cooperation: the US missile defense system and NATO missile defense capability, disarmament, non-proliferation, combating terrorism, energy security, democracy and the rule of law, human rights, and good governance²¹.

In the context of this Strategic Partnership, it was decided that the Aegis Ashore Missile Defense System (AAMDS), as an important element in Phase II of the European Phased Adaptive Approach (EPAA), will be established at Deveselu, Romania. The Aegis Ballistic Missile Defense (BMD) system is the primary sea-based component of the United States missile defense system. The system uses the mobility of Aegis-equipped cruisers and destroyers to permit intercepts during the ascent, midcourse, and descent phases as well as providing surveillance support to other elements of the BMDS. The US Naval Supply Systems Command Facility (NAVSUPPFAC) chose Deveselu, Romania, because of the lowest risk, lowest cost, and earliest deployable option for European BMD. Aegis ashore is a key part of phases II and III of the European Phased Adaptive Approach for BMD²².

2. A Bilateral partnership as a tool of confidence building measure in the Black Sea

2.1. An Innovative Naval Partnership

The critical aspect in managing security the Black Sea is the Montreux Convention. Romania, however, is a Black Sea nation, and no limitations apply to it, although its naval combat power is centered on three frigates, four corvettes, and three fast patrol missile patrol boats²³. By supporting Romania in building a significant naval force in the Black Sea, potentially including US frigate(s) or guided missile destroyer(s) (with Aegis radar system), the US would provide a deterrent force against the Russian Black Sea Fleet. This issue could also shape the Black Sea nations' internal affairs and might motivate Bulgaria and Turkey to cooperate with Romania, and, thereby work with the United States. The mechanism is not easily identified nor implemented. Diplomacy and international relations have to be used in order to shape this regional initiative. NATO and EU could be other beneficiaries of the

²¹ US Embassy in Romania, *Joint Declaration on Strategic Partnership for the 21st Century Between the United States of America and Romania*, 19 June, 2018, available online at: <https://ro.usembassy.gov/joint-declaration-on-the-strategic-partnership-for-the-21st-century-between-romania-and-the-united-states/>, accessed on October 20, 2018.

²² *Aegis Ashore Missile Defense System-Romania Operationally Certified*, Department of the Navy, US, December 5, 2016, available online at: https://www.navy.mil/submit/display.asp?story_id=94662, accessed on October 20, 2018

²³ “Fortele Navale Romane, Organizare”, *Navy.ro*, July 22, 2015, available online at: <http://navy.ro/en/index.html>, accessed on October 25, 2015.

evolution, especially in discussions on the free access to the Black Sea. The highest temperature point in Europe is now in the Black Sea, and that makes Romania a critical partner.

On December 18, 2015, the BMD shield in Deveselu, was officially declared operational, after all its elements were finalized²⁴. This capability will use Aegis BMD 5.0 CU and SM-3 Block 1B to provide ballistic missile coverage of Southern Europe, and will be operated by an integrated team of uniformed military, government civilians, and contractor personnel.

A destroyer or a frigate with Aegis capabilities in the Black Sea will help the system for a better anti-missile defense. The American European Reassurance Initiative is one of the main pillars. In order to implement this initiative, the US Navy executed maritime deployments in the Black Sea, sending *USS Donald Cook*, *USS Taylor*, *USS Truxtun*, and *USS Vella Gulf* to conduct operations to improve interoperability, increase readiness, and develop professional relationships with the Romanian Navy²⁵.

Adm. Mark Ferguson, former Commander of US Naval Forces Europe and Commander of the Allied Joint Force Command in Naples, said at the Atlantic Council, that Russian remilitarization is evident by the construction of an arc of steel from their new Arctic bases, to Leningrad and Crimea. This arc of steel is introduced by an advanced air defense, cruise missile systems, and new platforms. Russian Navy is consolidating the capability to project power in the maritime domain by rebuilding naval and air base in Syria giving them the opportunity to do so in the Eastern Mediterranean. "This is a sea denial strategy focused on NATO maritime forces. Their intent is to have the ability to hold at risk the maritime forces operating in these areas and thus deter NATO operations", according to Adm. Mark Ferguson²⁶.

The restrictions can be avoided if the United States would rent/lease at a symbolic price, battleships to the Romanian Navy, under certain circumstances. If the leasing is not an acceptable situation from the United States perspective, due to legal issues, a donation or selling at a symbolic price, under a specific contract, in the same conditions, with the ship's operation systems under United States management, and with a Romanian commanding officer.

Another advantage is that this ship would work better with the Naval Support Facility Deveselu. Romanian infrastructure will provide for the common use and at an acceptable cost based upon a common agreed contract in favor of both parties. (See Agreement between the United States of America and Romania on the Deployment of the United States Ballistic Missile Defense System in Romania. A future development of this ship transfer could be a bilateral Romanian-American Task Group composed of the US ship (destroyer/frigate) and Romanian frigates, corvettes, or mine sweepers, which would build an innovative naval partnership. In addition, the Turkish Navy, Bulgarian Navy, and other European Navies could be invited as well into this Task Group). A permanent Romanian – American Task Group, consisting of destroyers, frigates, corvettes, and mine sweepers will facilitate a prompt and

²⁴ Embassy of the United States, Bucharest, Romania, *US - Romania Joint Statement on the Technical Capability of the Aegis Ashore Site at Deveselu, Military Base, Romania*, December 17, 2015, available online at: <http://romania.usembassy.gov/aegis-deveselu-12182015-en.html>, accessed on January 20, 2016.

²⁵ Office of the Press Secretary, "European Reassurance Initiative and Other US Efforts in Support of NATO Allies and Partners", *The White House President Barack Obama*, June 03, 2014, available online at: <https://www.whitehouse.gov/the-press-office/2014/06/03/fact-sheet-european-reassurance-initiative-and-other-us-efforts-support>, accessed on October 27, 2015.

²⁶ Christopher P. Cavas, US: Russia Building 'Arc Of Steel' From Arctic To Med, *www.defensenews.com*, October 6, 2015, available online at: <http://www.defensenews.com/story/defense/naval/2015/10/06/russia-military-naval-power-shipbuilding-submarine-warships-baltic-mediterranean-black-sea-arctic-syria-estonia-latvia-lithuania-crimea-ukraine/73480280/>, accessed on April 2, 2016.

decisive reaction in any situation. The main mission could be the enhancing stability in the region through international cooperation, improving good relations, and increasing the level of interoperability. In addition, this Task Group could be related to Operation Black Sea Harmony, the Turkish initiative in the Black Sea²⁷.

2.2. Supporting strategically aspects

It is time to create a long-term naval agreement between the United States and Romania. The naval traditions between both nations over the years must be more proactive. Something has to be done without burning too many resources. A political agreement followed by a smooth naval implementation of Task Group could create a strategic position in the Black Sea, which should be accessed by all countries.

Time, space, and force will be in the US favor. Time is required to gain and to organize the Black Sea area. “*One’s favorable geostrategic position can considerably extend the warning time of an imminent enemy attack*”²⁸. Ships will not lose time transiting the Arabian Sea and Mediterranean Sea to reach the Black Sea. A United States – Romanian Task Group will be the most important tool, in a timely manner, operational planning, and decisions.

Regarding space, the Black Sea is very controversial. Although it is relatively small in surface, it has many factors influencing it, such as the Bosphorus and Dardanelles Straits, Crimean Peninsula dominating the middle of the sea, shallow waters, short distances among various points, making it more difficult for planning and execution of major operations. It is absolutely necessary to have US ships, personnel, and equipment in the port of Constanta, in Romania. The Task Group will provide command and control organization, logistics, reliable communications, cohesion of the personnel and crews, increasing the level of the leadership quality, training opportunities whenever it is necessary, and morale and discipline. The American ship under Romanian flag included in a Task Group can conduct presence operations, port visits, bilateral operations, and to execute operations to promote peace and stability in the region²⁹. Forces could be evaluated together in different operational environments. In my opinion, quantity is not the most important factor. Modern capabilities, especially Aegis destroyers and BMD assets, are an essential consideration in shaping the Task Group and staff. Strategically Russia will be forced to keep more naval forces in the Black Sea than usual, reducing the forces available elsewhere.

From the logistic point of view, Constanta Port has the entire necessary infrastructure to accommodate military ships. The port has excellent connections with the Central and Eastern Europe through the Corridor IV (rail and road), Corridor VII Danube (inland waterway), to which it is linked by the Danube-Black Sea Canal, and Corridor IX (road), which passes through Bucharest. The port characteristics are comparable with those offered by the most important ports, allowing the accommodation of tankers with a capacity of 165,000 dwt. and bulk carriers of 220,000 dwt³⁰. Constanta Shipyard is ranked among the largest new-buildings and ship-repairs yards in Europe, the world’s 3rd place shipbuilder for medium range products & chemical tankers, and provides the ideal location for building and

²⁷ Turkish Naval Forces, *Operation Black Sea Harmony* (OBSH), November 13, 2015, available online at: http://www.dzkk.tsk.tr/icerik.php?dil=0&icerik_id=27, accessed on January 17, 2016.

²⁸ Milan Vego, *Joint operational Warfare, Theory and practice*, National Defence College, 2008, pp. III 12-III 70.

²⁹ Office of the Press Secretary, The White House, *Fact Sheet: European Reassurance Initiative and Other US Efforts in Support of NATO Allies and Partners*, June 03, 2014, available online at: <https://obamawhitehouse.archives.gov/the-press-office/2014/06/03/fact-sheet-european-reassurance-initiative-and-other-us-efforts-support->, accessed on October 20, 2018.

³⁰ “Constanta Port”, available online at: http://www.portofconstantza.com/apmc/portal/static.do?package_id=conditii &x=load, accessed on April 26, 2016.

repairing of sea-going vessels up to 200,000 dwt³¹. In addition, at Mihail Kogalniceanu, there is a military/civilian airport capable of conducting a wide spectrum of operations.

The United States faces the situation planning almost each month, a bilateral Romanian – American Exercise in order to maintain a ship in the Black Sea permanently. In this situation, it is extremely difficult to have an integrated and consolidated operation plan in the Black Sea. The United States must have a more pro-active strategy in the Black Sea. The United States is keeping a ship (destroyer or other warship that is Aegis-capable) inside of the Black Sea by sticking to the 21-day rule, with enormous logistical efforts, under the uncertainty of Montreux Convention, with missions shaping from day to day in accordance with the regional policy stream. A Black Sea strategy is needed along with a rethinking of national US interests. The American politicians can view the Black Sea as a hub of a coherent maritime security strategy with the superior capabilities of Aegis systems, and with a reduced budget.

It is true that many American politicians, diplomats, and foreign policy think tanks will find this development of Montreux Convention circumvention unnecessary. Many of them will reaffirm that China and South-East Asia represent strategic and long-term US interests. The US must also balance the importance of relationship with Turkey who still wants to play the major role in the Black Sea.

All these are apparent, but not a real problem in comparison with the benefits for the NATO/EU and the Black Sea littoral countries. This ship will establish a bridge between Constanta port and all other theaters, will be the main platform for the BMD system, serve as the main core of a possible future international Task Group, and guarantee stability in the Black Sea area. This ship could facilitate the level of interoperability, mutual confidence, and stability. One single US ship could help US, NATO, EU, and the entire region to balancing Russian naval power.

Conclusions

The US President, Barack Obama, in his address to the People of Europe at Hannover, Germany, emphasized the importance of Article 5 as NATO's central mission, and in this regard NATO will continue to bolster the defense of frontline allies in Poland and Romania and the Baltic states³². The United States has declared on many occasions that inside the Black Sea there is a military and security power vacuum. Putin is also concerned about the future deployment of the United States, and NATO military. I am confident that having US ships under Romanian command with a consolidated Romanian-American Task Group including a reliable asset such as the Aegis system, under a low budget, will bring a new perspective of regional security.

Changing the balance of power and security dynamics in the Black Sea by selling/leasing a frigate or a destroyer to Romanian Navy and creating a short term Task Group should be one of the strategic objectives for the United States' political and military agenda in order to maintain the access to the Black Sea for all nations.

This maritime deployment together with Missile Defense / European Phased Adaptive Approach and Black Sea Rotational Forces (BSRF) will follow actions that the US has taken in order to show the support to allies who are now concerned by Russia's actions in Crimea, Syria, and the Black Sea.

³¹ "Şantierul Naval Constanta" (*Constanta shipyard*, Company profile, about us), 2010, available online at: <http://www.snc.ro/27/about-snc/static.html>, accessed on April 26, 2016.

³² Barack Obama, "Remarks by President Obama in Address to the People of Europe", *whitehouse.gov* April 25, 2016, available online at: <https://www.whitehouse.gov/the-press-office/2016/04/25/remarks-president-obama-address-people-europe>, accessed on April 25, 2016.

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CONTINUOUS GENERATION OF MILITARY CAPACITIES – AN ESENTIAL CONDITION IN ORDER TO ENSURE NATIONAL AND EUROATLANTIC SECURITY

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Abstract: *At a global level, we are witnessing an arms race that has not been seen since the Iron Curtain was lifted. The threats to our country are mainly coming from the East, where Russia exercises its status as a regional power and tends to change the world order by redefining the power poles and redefining the spheres of influence. At this point, Romania can assume the position of guarantor of security at the level of the eastern part of NATO and of the European Union, which generates stability in the region, including in the Balkans. But in order to achieve these goals, besides a very well-established diplomacy, there is a need for military capabilities that can lead to discouragement.*

Keywords: *European Union Deterrence Initiative, European army, military capabilities, military budget, Smart Defense, Pooling and Sharing.*

Introduction

In order to demonstrate the need for a continuous generation of military capacities as a condition to ensure national and Euro-Atlantic security, we will make a full analysis of the main risks that the Euro-Atlantic area is facing, focusing on our country, as well as how to prevent those threats by developing capabilities, that both prevent and counteract any such threat.

Thus, we will proceed an analysis of the focus agenda of the last NATO summit in Brussels (11-12 July 2018), so we can be able to understand all the new measures taken by the North Atlantic Alliance regarding this need for generation of military capacities, namely: the survival of the transatlantic unity. Code name - burden-sharing; the largest plan to reinforce collective defense after the Cold War; firmness on regard to Russia and this country actions that reaches new milestones; the fight against terrorism; NATO enlargement as a promise.

1. The survival of the transatlantic unity. Code name - burden-sharing

The Brussels summit had a major political stake within the Alliance that needed to be settled i.e. proving transatlantic consensus and unity among allies by overcoming contradictions on military expenditure¹, because before the summit many NATO member states were stating they do not need or are not financially prepared to participate more to the common budget burden that needs to be shared, situation that created discomfort among the different allies, particularly between US and some European Member States.

¹ Robert Lupitu, "Cele cinci puncte cheie ale summitului de la Bruxelles. Cu ce rămâne NATO după disputa cu scânteii provocată de Donald Trump", Calea Europeană, July, 13, 2018, available online at: <https://www.caleaeuropeana.ro/cele-cinci-puncte-cheie-ale-summitului-de-la-bruxelles-cu-ce-ramane-nato-dupa-disputa-cu-scanteii-provocata-de-donald-trump/>, accessed on September 15, 2018.

It is unclear whether the US President's tactics, those that raises the level of defense spending to 4% of GDP for all Allies, as many of the European Allies are still not on the path of allocating the 2% by 2024, agreed by commitments in Wales and Warsaw Summits², has caused the major discord, but it is obvious that this percentage management of the administration that manages a military budget twice as high as that of all the allies together, puts a high pressure on the matter.

Although the alliance's survival discussions intersect different opinions, those who have seen such a potential risk, or those who have argued to defy this sentence, the result is written in black on white: for the first time, after many years, the Final Statement of the NATO Summit in Brussels³ begins with a paragraph dedicated to reaffirming the commitment to Article 5 for collective defense. This is by far, in our opinion, the cornerstone of NATO, and the thing that makes the alliance resist together for more than seven decades.

2. The largest plan to reinforce collective defense after the Cold War

The decision to reaffirm the commitment to the Article 5 of the Washington Treaty, captures the essence of military collective defense. Also, the deterrence measures that NATO has adopted in Brussels require consideration in the same logic. The alliance has transformed its command structure by deciding to set up two new headquarters, one in the US for securing transatlantic communication lines and another in Germany for logistics and military mobility. Subsequently to this modernization of the NATO command line, the so-called "*NATO Readiness Initiative*", also known as the "*Four 30*", will be staged up by 2020. Through this initiative 30 mechanized battalions, 30 Airborne Squadrons and 30 warships may be deployed if necessary within 30 days⁴. In a sentence, it was created a "*backbone*" specific to an organization with military valences on which large forces and capabilities can be placed across the allied dimension, including through a military mobility plan focused on overcoming legal barriers and connecting the necessary infrastructure to deploy forces. Last but not least, the attachment of cyber and hybrid dimensions to the major operational areas is proven by the decision to create a Cyber Operations Center in Belgium and the establishment of mobile tactical teams to be deployed when needed.

3. Firmness on regard to Russia and this country actions, reaches new milestones

NATO re-stated that it has worked to build a partnership with Russia, including through the mechanism of the NATO-Russia Council (NRC), but "*Russia's recent activities and policies have reduced stability and security, increased unpredictability, and changed the security environment*"⁵. Thus, despite the fact that Russia was not present as in Warsaw and Wales summits in the *Brussels Summit Final Statement*, the member countries qualified Russia in the toughest terms. In these framework there were discussed the illegal annexation

² See the texts of *The Wales Summit Declaration issued by the Heads of State and Government participating in the meeting of the North Atlantic Council* in Wales on September 5, 2014, available online at: https://www.nato.int/cps/ic/natohq/official_texts_112964.htm, accessed on September 15, 2018 and *The Warsaw Summit Communiqué issued by the Heads of State and Government participating in the meeting of the North Atlantic Council*, in Warsaw 8-9 July 2016, available online at: https://www.nato.int/cps/su/natohq/official_texts_133169.htm, accessed on September 15, 2018.

³ *Brussels Summit Declaration issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Brussels*, NATO, 11-12 July 2018, available online at: https://www.nato.int/cps/em/natohq/official_texts_156624.htm, accessed on September 15, 2018.

⁴ Robert Lupitu, *op. cit.*

⁵ *Brussels Summit Declaration issued by the Heads of State and Government participating in the meeting of the North Atlantic Council in Brussels*, para. 4, *op. cit.*

of Crimea and the destabilization of the East of Ukraine as well as the concerns about non-compliance with the international commitments made by Moscow, including the nuclear dimension, and Russia's political sanction for interference in Euro-Atlantic electoral processes and the maintenance of the hybrid war in the region.

4. The fight against terrorism

Less deepened in the discussions of this summit is the scale of the fight against terrorism. NATO launched for the first time a *Package on the South*⁶ to secure the southern allies, but also the North African and Middle East partners. Three countries - Tunisia, Afghanistan and Iraq - will benefit most from the measures in this plan. For Tunisia, the Alliance approved a new package of assistance and support. In the case of Afghanistan, the *Resolute Support* mission will benefit from an augment contingent and NATO launches for the first time a training mission in Iraq. In the same region, an apparent strategic concession made by the US in the area, but which does not worth to go unnoticed is that NATO treats Iran in the Final Declaration as an actor who destabilizes the Middle East.

5. NATO enlargement as “a promise”

At the first summit with 29 members, after Montenegro's accession in 2017, NATO leaders decided to continue the policy of open doors through the invitation for accession made to Macedonia, a blocked and postponed enlargement with a decade, because of the Skopje-Athens dispute over the official name of the country dispute that meanwhile was solved⁷. The finalization and implementation of the agreement agreed by the Macedonian and Greek Governments was the condition that, once fulfilled, will turn North Macedonia (the new name of the country) into the 30th member of the North Atlantic Treaty Organization⁸. Thus, in the Brussels Summit in July 2018, Allies invited the former Yugoslav Republic of Macedonia to begin accession talks to join NATO.

If at the strategic level, for our country, things seem pretty clear, the defense of the security of the Romanian citizens, the participation in the common defense of the European and Euro-Atlantic area, the defense of democracy and the democratic values, at the operative level things are becoming more unclear.

The multiple recent changes on the security scene make the operational level, in our opinion, the most important level of the moment. Starting from Russia's aggressive measures in the last decade, the failure to respect the integrity and territoriality of a sovereign state such as Ukraine, the failed of the coup d'état in Turkey, and recently seeing the results of the referendum triggered for the current president of Turkey in order to have more prerogatives, we only conclude that the operative level is in a constant change, and our country cannot ignore these changes and revise its defense plans so it can counter these new threats. Because these last thing can be seen as a new threat.

Other threats for our country and for the eastern part of the Euro-Atlantic territory are the frozen conflicts in Transnistria, where Russian troops frequently carry out exercises of

⁶ *Ibidem*, para. 55.

⁷ Hellena Smith, “Macedonia agrees to new name after 27-year dispute with Greece”, *The Guardian*, June 12, 2018, available online at: <https://www.theguardian.com/world/2018/jun/12/macedonia-agrees-to-new-name-after-27-year-dispute-with-greece>, accessed on October 25, 2018.

⁸ *NATO adopts new Strategic Concept*, NATO, November 19, 2010, available online at: https://www.nato.int/cps/en/natolive/news_68172.htm, accessed on September 20, 2018.

crossing the Dniester for an eventual occupation of the Moldovan territories⁹, or the conflicts in the Western Balkans. Here, the nervousness is growing, the investments in defense technology have made a huge leap in recent years, and the fierce statements of Serbian and Kosovo officials only make the spirits stir more and more¹⁰. All these elements together make the operational level of the threats, to which our country is subjected, to be in a constant change, and the measures taken must be accordingly.

Using various pretexts or second-round games thrown out for the media for it to be really stifled with peripheral but spectacular information, the architects of the great ongoing negotiations manage to divert attention from events that are really important to us and whose succession is to be placed only on the table of decision makers considered relevant to the world of tomorrow.

Once the intensity of conflict increased and the level of arsenal technology advanced, it had appeared the need for super powers to bid in military offers, and in this way they raised considerably the level of weapon delivery systems. Reaching now to put on the table what we know to be the highest performance systems that they have in their arsenals. Russia and the US deliver the most advanced anti-missile systems they are currently producing (S-400 or PATRIOT) to understand that at this moment there is a ruthless battle for present and future areas of influence. We did not put the S-500 on the wishlist although is the best-performing system Russia has at the moment not yet for export¹¹. Still, the role of military diplomacy that we can say is highly-active in this armament industry as we discuss of military assets valuing thousands, tens or hundreds of billions US dollars without taking into account the values of transactions for short or medium term contracts, followed by long-term maintenance costs.

In a military perspective the production and export of the Russian military arsenal has spectacular consequences because these systems will be in close proximity to the ones deployed by the US and NATO in order to ensure Turkey's security. But equally important and relevant is the fact that, it could work in with those already deployed in Syria at Latakia base and this would provide a total ban on access (A2AD¹²).

With regard to NATO's Eastern Flank Area, the European Deterrence Initiative (initially the European Reinsurance Initiative) will be funded with \$ 6.5 billion, up from the 4.8 billion allocated for 2018 and the 3.4 billion spent in 2017¹³.

As part of US foreign operations, for which the Pentagon has requested funding of \$ 89 billion, the \$ 6.5 billion granted to the European Deterrence Initiative aims to improve US deterrence activities in Eastern Europe in order to be able to provide safety to the allies and

⁹ "Russian Military Games on Dniester Anger Moldova", *Balkan Insights*, August 15, 2018, available online at: <http://www.balkaninsight.com/en/article/russian-soldiers-forced-the-dniester-river-from-transnistria-08-15-2018>, accessed on October 12, 2018; Cristi Vlas, "400 Russian Operative Troops conducted shooting exercises in Transnistria", *Moldova.org*, August 2018, available online at: <http://www.moldova.org/en/400-russian-operative-troops-conducted-shooting-exercises-transnistria/>.

¹⁰ Georgeta Chirlesan, *Strategia de securitate națională a României: evoluții și tendințe între securitatea regională și cea euro-atlantică*, Editura Academiei Forțelor Terestre „Nicolae Bălcescu”, Sibiu, 2013.

¹¹ "Bugetul militar al SUA de 716 miliarde de dolari, aprobat în timp record: 6,5 miliarde destinați securității României și a flancului estic al NATO", *Calea Europeana*, August 02, 2018, available online at: <https://www.caleaeuropeana.ro/bugetul-militar-al-sua-de-716-miliarde-de-dolari-aprobat-in-timp-record-65-miliarde-destinati-securitatii-romaniei-si-a-flancului-estic-al-nato/>, accessed on September 19, 2018.

¹² "A2AD forces are classified as those that contribute to denying an adversary's forces access to a particular region or otherwise hinder freedom of maneuver. A2AD forces typically include air defenses, counter-maritime forces, and theater offensive strike weapons, such as short- or medium-range ballistic missiles, cruise missiles, and other precision guided munitions". See details at: The Russia – NATO A2AD Environment, Missile Threat, January 3, 2017, available online at: <https://missilethreat.csis.org/russia-nato-a2ad-environment/>, accessed on September 18, 2018.

¹³ "EU budget: €4.8 billion in security funding for a Europe that protects", Strasbourg, European Commission Press Release, 13 June 2018, available online at: http://europa.eu/rapid/press-release_IP-18-4125_en.htm, accessed on 28 October, 2018.

partners from NATO and discouraging aggressive actors. The increase in funding for the European Deterrence Initiative was also approved in the context in which NATO decided at the Brussels summit the launch of the Readiness Initiative, a US-funded plan through which is reinforced NATO's discouraging and collective efforts by activating, if necessary, additional forces¹⁴.

The Romanian Ministry of National Defense continued in 2018 the steps and the implementation of measures in order to generate the proper conditions for the modernization of the Romanian Armed Forces to the specific risks and challenges of the current geopolitical context and to strengthen the profile of Romania¹⁵ as a relevant strategic partner both at NATO and European level.

In the context of 2% of Romania's GDP being transmitted for the defense budget, Romania is one of the few Member States that fulfills the allies' commitments to share responsibilities equitably, the 3 C - cash, capabilities and contributions¹⁶. The year 2018 means investments in the infrastructure of the main military units, but also the continuation of procurement programs that are ongoing. The Romanian Army's equipment acquisition plan includes HIMARS missiles, armored conveyors, multifunctional corvettes and F16 planes. Romania has expressed its request to acquire three HIMARS multiple missile launchers, and in February the payment for the first system was made, with the total worth of 409,434,586 US dollars. Also, the Ministry of National Defense has specified that for the 227 armored conveyors for troops, the first payments were also made in February, with a total worth of 142,707,217 euros. The offset of this program will take place within the Bucharest's Mechanical Plant, where these trucks will be produced. Romania will purchase seven ground-air missiles systems with long beat (HSAM) - PATRIOT, totaling about 4 billion euros. Four systems will be designed to the Air Force Staff and three systems will be provided to the Land Forces Staff, the first system to be operational from 2020. Also, another important anti-aircraft defense system that will be acquired in the next period is short-range and very short-range missiles (SHORAD and VSHORAD) system. The total worth of it is around 2 billion euros¹⁷.

On regard to the allied security in the Black Sea area, we believe that even a naval rotation program of the US and other NATO allies in the Black Sea will not be enough to deter possible Russian aggression, especially after we have seen illegal annexation of Crimea from Ukraine. Analyzing Romania's and Bulgaria's naval capabilities compared to those of Russia, as well as Turkey's changing perspective after the failed coup attempt, it seems increasingly difficult for our country to be able to provide a viable response to the threats coming from the Wider Black Sea Area. The proposal made from our country to form a fleet in the Black Sea along with Turkey and Bulgaria has not materialized. In addition to the refusal of the Bulgarian authorities to contribute effectively to the formation of this capability,

¹⁴ "EUCOM anunță Planul de Implementare a Inițiativei de Reasigurare Europeană", US Embassy of Romania (Romanian website), March 30, 2016, available online at: <https://ro.usembassy.gov/ro/eucom-anunta-planul-de-implementare-initiativei-de-reasigurare-europeana/>, accessed on September 18, 2018.

¹⁵ "Good Progress of EDA Pooling & Sharing Projects", European Defence Agency, November 19, 2012, available online at: <http://www.eda.europa.eu/info-hub/news/2012/11/19/good-progress-of-eda-pooling-sharing-projects> accessed on October 25, 2018.

¹⁶ "Fifor: România, printre puține țări ale NATO care îndeplinește cei 3 C: cash, contribution, capabilities", Agerpres, October 10, 2018, available online at: <https://www.agerpres.ro/politica/2018/10/10/fifor-romania-printre-putinele-tari-nato-care-indeplineste-cei-3-c-cash-contribution-capabilities--190505>, accessed on October 20, 2018.

¹⁷ Robert Lupitu, "România, exemplu pozitiv la summitul NATO confruntat cu tensiuni între SUA și aliații europeni: Țara noastră se menține în top-ul aliaților care alocă cei mai mulți bani pentru înzestrare militară", Calea Europeana, July 10, 2018, available online at: <https://www.caleaeuropeana.ro/romania-exemplu-pozitiv-la-summitul-nato-confruntat-cu-tensiuni-intre-sua-si-aliatii-europeni-tara-noastra-se-mentine-in-top-ul-aliatilor-care-aloca-cei-mai-multi-bani-pentru-inzestrare-militara/>, accessed on September 16, 2018.

at this moment Turkey is rethinking its strategy at European, Euro-Atlantic and, why not, Eurasian level. As a result of the latest events in this country, the idea that she is forming a partnership with Russia is becoming more and more unimaginable for NATO and the EU, given that this country is one of the most important military ally for NATO in Europe, and the second country contributing military forces to the Alliance. If we consider here Turkey's geo-strategic position, we will see that a possible change of vision of this country and its fall under the influence of Russia will cause the change of power poles both in the Black Sea region and in the Eurasian area. We need to Turkey is the country that controls battleships entering in the Black Sea, in accordance with the Montreux Convention, which limits the access of the Allies and will create restrictions to mobilize the North Atlantic Alliance naval forces in the area.

With regard to the strategic importance of the Black Sea, we believe that Romania must pursue a more aggressive policy in order to highlight the importance of this area and to determine the partners from the Alliance to create a permanent military fleet in this area. In the case of the militarization of this area, by Russia actions of bringing important military capabilities, it can represent a real danger for our country. Romania has a limited number of military naval capabilities, Bulgaria as well, and the control over the commercial routes is of great importance for the entire European Union. Only through NATO this area can be secured and so economic activities and the security of the area can be preserved. At present, NATO does not currently have sufficient forces on the Black Sea or along the eastern border in order to provide the strong deterrent factor as it has been mentioned in the latest statement by the Heads of State and Government at the Brussels Summit. Towards the end of this decade, the importance of maritime security will increase significantly and the importance of improving military capabilities is crucial for both NATO and the EU. Romania needs to work efficiently and propose vehemently the review and the immediate updating of the Allied Maritime Strategy. The political environment must work with the military factor to highlight the importance of the Black Sea region and to determine at allied level the creation of a credible maritime capability in our country.

Conclusions

In view of those mentioned above, we consider that, through Smart Defense and Pooling and Sharing can be initiated programs in order to increase military capabilities and the build of a permanent naval force under the Romanian flag. In order to comply with the Montreux Convention, allied military ships are not allowed to stay in the Black Sea for more than 30 days. The allied maritime presence is done through naval exercises. The only way in which NATO can have a permanent fleet on the Black Sea is that one of the riparian countries have this capability. Thus, through Smart Defense and Pooling and Sharing, we can developing a project in which our country assumes the status of leading nation.

The realization of the capabilities system for collective defense is subject to a complex determinism, which includes determinations and imperatives of political, strategic, technological and economic nature. Due to the fact that, besides collective defense, the NATO operations are currently also crisis management, at the capabilities generation we must take into account the comprehensive approach of operations. Thus, at the building of the capabilities we must take into account the political, military, diplomatic, economic and informational instruments, in order to carry out to the end an action.

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THE IMPORTANCE OF COMPETITIVE INTELLIGENCE IN DEVELOPMENT OF THE BUSINESS ENVIRONMENT

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Abstract: *The business environment and specific environments of intelligence activities share an important common feature: lack of certainty. Although supposedly digitization and technological progress should ease the manager’s decision-making (through easier access to information), in practice, he is overwhelmed by the large amount of data he has at his disposal. The difference is made by those going from the “curiosity” to the “verified information” stage.*

Making this detailed process of collecting relevant data is extremely important. And this activity is characteristic of Competitive Intelligence (CI) structures. The raw data is then transformed into intelligence, and only now it can form the basis of strategies and action plans (or analyses, forecasts, etc.). This is one of the main strengths that a company can have, namely performance in anticipation.

Romania has significant potential for economic development, which is also encouraged, for example through the Start-up Nation Government Program. According to data released by the Ministry of Business, Commerce and Entrepreneurship, the aforementioned program finances ten thousand companies annually. They suddenly create competition across several economic sectors in different areas. To resist the market, both emerging and senior firms are forced to adapt quickly and understand the direction and magnitude of the changes that have taken place. Thus, the CI can help these changes to be of lesser magnitude and, perhaps most importantly, to converge towards the creation of a sustainable, coherent and without major destabilization economic environment.

Keywords: *competitive intelligence, information, business environment, business competition, economic forecasts.*

Introduction

With the dissolution of URSS and the Communist Block, the outlook of the international economy is rapidly changing. If until 1989 we were dealing with two large blocks- the capitalist and the communist one, fundamentally different and with no major economic exchanges except with each other, the beginning of the '90s comes with major changes. Liberalization of markets (including capital markets), emergence and development of new markets, reorganization of customs tariffs, all these have led to the need of giving greater importance to economic security. The interdependence of states now rely on their ability to co-operate, to exchange and to influence each other from an eminently economic perspective. They understand that their security now also depends on the domestic economic environment, the trade relations it carries out, but also the international situation or state of affairs. It is important to note here that one of the incipient arguments of European integration was the joining of the heavy industries of coal, steel, nuclear, and the replacement of independence with the interdependence of states in this regard.

The Global Risks Report, an annual study published by the World Economic Forum, globally examines, studies and identifies the risks that humanity faces in the coming year. The latest report¹, dated January 2018 (which emerged from the Davos-Switzerland meeting, having as the central theme of debates: *Creating a Shared Future in a Fractured World*), identifies a heightened risk in the following areas:

- a) Persistence of social and economic inequalities;
- b) Political tensions at national and international level;
- c) Environmental hazards;
- d) Cyber-vulnerabilities.

We note, therefore, that one of the notable problems we are currently facing is of an economic nature, of major importance, with real possibilities to destabilize local, national or international security. If a state has enough leverage to cushion the bad impact of sudden changes / threats, a private company cannot do the same. Also, a weak management leads to the bankruptcy and disappearance of a firm on the market, which cannot happen with a state (in the sense that it can go bankrupt but does not disappear, and the economic crisis turns into a political one)².

From another perspective, however, one of the principles of economic security is that we go into any analysis on the assumption that economic agents work more competitively on an uncertain market. It goes without saying that in the economic environment we cannot speak of perfect safety and balance. So, uncertainty increases competitiveness, stimulates creative spirit, analytical and predictive capabilities.

1. Developing the business environment in Romania

In order for the business environment to grow and develop, it is necessary that as many companies as possible adapt to the new technologies (this does not simply mean adopting them, but understanding their impact - whether positive or negative), work based on strategies, on plans related to budgets and performance criteria.

At the international level, the *Strategic and Competitive Intelligence Professionals* (SCIP) is a global non-profit membership of industry experts, academia and government who come together to build and share strategic intelligence, research decision-support tools, processes and analytical capabilities. Established in 1986, today SCIP has branches around the world. In addition, SCIP has alliance partnerships with independent affiliate organizations in many countries. Specifically, SCIP provides education and networking opportunities for business professionals working in the rapidly growing field of competitive intelligence (the legal and ethical collection and analysis of information regarding the capabilities, vulnerabilities, and intentions of business competitors). Many SCIP members have backgrounds in marketing, strategy, market research, strategic analysis, science and technology, data science, economics³.

At national level, we can find the *Association of Business Intelligence Specialists* (ASIA)⁴ – a non-profit entity in Romania set up to develop the Business & Competitive Intelligence field, thus contributing to increasing the competitiveness of companies in our country.

¹ *The Global Risks Report 2018*, 13th Edition, World Economic Forum, Switzerland, 2018, available online at: http://www3.weforum.org/docs/WEF_GRR18_Report.pdf, accessed on September 15, 2018.

² Barry Buzan, Ole Wæver, Jaap de Wilde, *Security: a new framework for analysis*, CA Publishing, 2010, pp. 154-160.

³ Official website of Strategic and Competitive Intelligence Professionals (SCIP), available online at: <https://www.scip.org>, accessed on September 21, 2018.

⁴ Official website of Association of Business Intelligence Specialists (ASIA), <http://asia.org.ro>, accessed on September 21, 2018.

Thus, working methods in the CI are very complex and comprise many areas of activity, bringing together experts from finance to statistics, marketing, or leadership. The necessity of staging and planning work is essential. We are not just talking about a simple data collection (this is essentially the easiest thing to achieve), but the transformation of these data, the way we can understand them for our own benefit which it brings added value and long-term advantage.

If CI is used only as a source of information, the company manages to keep up-to-date with what's happening around it. The ultimate goal is not this, but helping the company to build long-term forecasts and plans, becoming a leader, a trailblazer, not a mere follower. Ideal is to achieve a long-term competitive advantage, stability and continuous development.

“Security should play a tangible role in the development policies of any business and should be taken into account when establishing budgets for risk and security strategies. The field of security requires a complex approach that goes beyond the dichotomical way that considers the relationship between defenders vs. real or virtual attackers”⁵. It is very common for companies to use the method of setting up the main competitor(s) and continuing the fight with them. It is obvious that in a world of globalization, easy access to information, permanent change, this method is obsolete. Vigilance and strategic planning help to quickly identify vulnerabilities and ideally turn them into opportunities; the key to success is a response time as low as possible.

According to the National Trade Register Office, the number of radiated companies (which cease activity) is on the increase⁶.

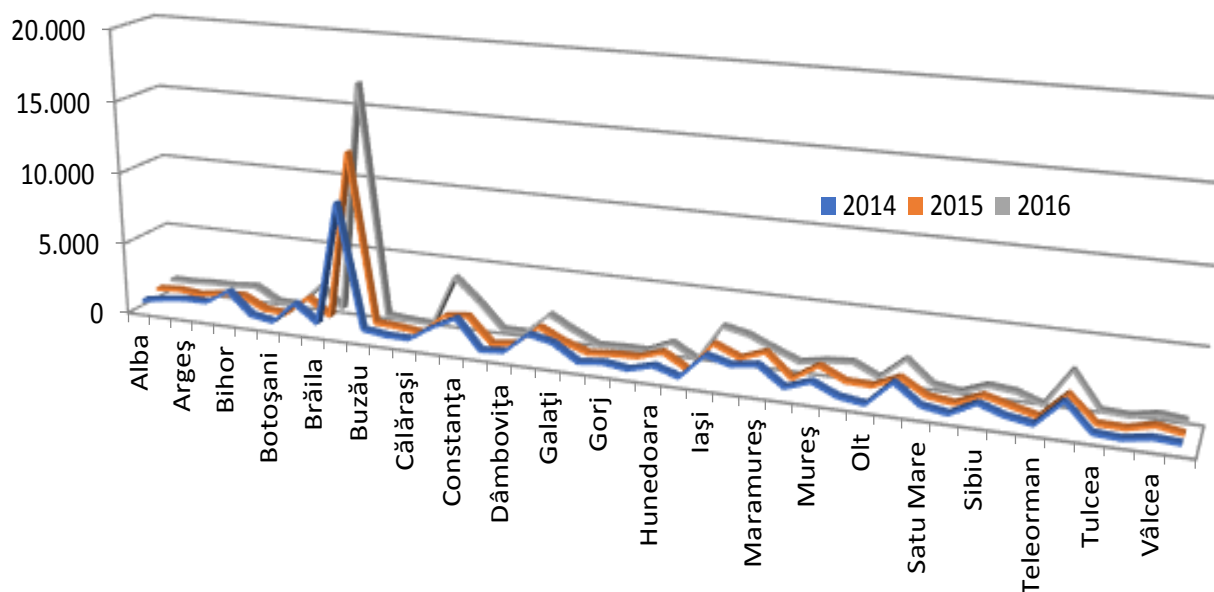


Chart no. 1: Statistics on the number of legal persons, radiated between 2014 and 2016, at national level

From the chart above, we notice that the number of firms that cease to work is rising. If in 2014 there are 52,387 radiated companies, the number increases to 53,603 in the following year, while in 2016 the growth is even higher (about 24%), accounting for 66,687

⁵ Adreian Pârlog, “Corporate Security Services - A Present-Day Demand”, in *Business/Competitive Intelligence*, No. 6, 2013, pp. 18-19, available online at: <http://www.onrc.ro/index.php/ro>, accessed on September 21, 2018.

⁶ Official website of Romanian National Trade Register Office, available online at: <http://www.onrc.ro/index.php/ro/statistici?id=251>, accessed on September 21, 2018.

enterprises. However, according to the same source, only the first half of 2018 (January-July) registered 82,060 new firms. Considering the decrease in the number of active market operators, the tightening of credit conditions in general, the increasing difficulties and risks for starting a business, the Government of Romania adopts an emergency ordinance to stimulate the establishment of new small and medium-sized enterprises called the Start-up Nation Program. It aims to encourage and help the start-up entrepreneurs by offering a maximum amount of 200,000 lei/beneficiary, representing 100% of the eligible expenditure, up to a maximum of 10,000 small and medium-sized enterprises fulfilling the eligibility conditions. At the end of 2017, there were 8,444 signed financing agreements (out of over 19,000 sent files)⁷. The interest shown in this program shows that Romanians are interested in becoming entrepreneurs and have business ideas, and the support received from the state motivates and encourages them.

An attempt to boost and revitalize the business environment in our country is therefore noticed. But we cannot fail to notice the fluctuation within the Romanian entrepreneurial environment, which may indicate instability, inconsistency or lack of vision. Designing a detailed business plan and strategy is now mandatory taking into account what Douglas Bernhardt, an economic and CI analyst, said in his paper "How to acquire and Use Corporate Intelligence and Counter-Intelligence": *the strategy that is not based on intelligence is not a strategy but a guess*⁸.

2. Managing vulnerabilities and threats through Competitive Intelligence

Robert K. Merton, a renowned American sociologist, speaks in his work "The Matthew Effect in Science"⁹ about the crucial importance of having an initial advantage and how it can be a determining factor in a person's career. The distinguished professor uses an example from the academia, namely, an eminent scientist will get more credit for his work than a lesser known one, even if the work done is the same, and this spiral tends to perpetuate and is difficult, if not impossible, the roles to be reversed (the success attracts success and defeat brings defeat).

By extrapolating, we can see the impact of Matthew's¹⁰ effect on the economy as well. It is easier for a powerful multinational company to cope with market fluctuations and find ways to adapt than a small local business. A company operating in several countries at the same time will be able to understand faster the dynamics of capital markets, find new financial markets and take priority over acquisitions and mergers.

Nevertheless, national firms may come out of the spiral of the above-mentioned effect, take advantage of multinationals and progress. We can see an example in this respect even on the Romanian market: the entry of foreign firms on the domestic market after 1989 brought about the creation of a competitive framework, new technology, knowhow and capital infusion through foreign direct investments.

At the same time, companies operating on the territory of several countries (even continents) may have problems maintaining their profits continuously. It is possible that the same product may not be marketed in the same form on all markets due to cultural, religious

⁷ Official website of Start-up Nation Program, available online at: <https://start-up.ro>, accessed on September 21, 2018.

⁸ Douglas Bernhardt, *Competitive Intelligence. How to acquire and use corporate intelligence and counter-intelligence*, FT, PrenticeHall, 2003, pp. 87-90.

⁹ Robert K. Merton, "The Matthew Effect in Science", in *Science*, v. 159 (3810), 1968, pp. 56-63.

¹⁰ The name originates from the Gospel after Matthew, in the Bible: *For to everyone who has, more shall be given, and he will have an abundance; but from the one who does not have, even what he does have shall be taken away.*

differences, etc. Neither survival on a market in a certain area is easy and does not come from itself, nor the penetration of new markets and the identification of new competition.

Under these conditions, how do companies manage the vulnerabilities they face, meet challenges and resist threats?

In this sense, the best performing method of work belongs to the field of *Competitive Intelligence*. Company managers do not lack statistical or economic data, etc., but the difficulty consists in analysing and linking a large number of data, indicators, news, open sources, and based on these, formulating relevant analyses, forecasts and solutions.

Christopher Murphy in “Competitive Intelligence. Gathering, Analysing and Putting it to Work” states that “[...] any factor that imposes a risk to opportunities or profitability is entrusted to the CI department”¹¹. By extrapolating, an analysis of CI experts is useful in avoiding any sensitive/problematic situations that may arise and the scope of this activity goes beyond the strictly economic sphere. The activity of CI should not be confused with espionage. The latter belongs rather to the state and not to the private environment. Competitiveness through information is one within the limits of legality and ethical principles.¹²

Chris West, in the “Competitive Intelligence”), proposes a way of working for the CI activity by targeting a division into four broad categories of information gathering and analysis:

- A. Who are the competitors? (current or potential);
- B. Competitors’ profiles (current or potential);
- C. Interpretation of data;
- D. Counter-intelligence¹³.

A. Studying competition is no longer an exclusive domain of the marketing department. By reducing to essence, all firms compete with each other in the sense that they want a bigger share of consumer revenue. Otherwise, competitors can be at the product level (all companies selling the same products), at industry level (the same product class), or at a wider level, all products or services that meet the same needs¹⁴.

B. Compiling detailed profiles of competitors involves collecting a large number of data. A record shall be made out for each of them containing data on:

- Company details and organization: headquarters, company structure, organisational structure, production locations, divisions, employees, shareholders, etc.;
- Financial performance: consolidated key financial performance data;
- Products: product types, raw materials, supplies, new products in testing, etc.;
- Production: production capacity, production level, technologies and licenses;
- Suppliers: who are suppliers of raw materials or equipment?;
- Sales and customer base: characteristics and qualifications of the sales force, role of the sales staff, volume and value of sales, sales by applications, sales fluctuation;
- After-sales follow-up: technical support, qualification and number of employees on technical support, response time to requests, etc.;

¹¹ Christopher, Murphy *Competitive Intelligence. Gathering, Analysing and putting it to Work*, Gower Publishing, UK, 2005.

¹² In the US, “The Economic Espionage and Protection of Proprietary Information Act” has taken out the offense of violating the business secret and the one of stealing private information from under the jurisdiction of the local and state authorities and passed them under the jurisdiction of the federal authorities. There is no equivalent of this law in Romania’s legislation nor in the European Union’s law. However, there are more laws that incriminate the economic espionage.

¹³ Chris West, *Competitive Intelligence*, Palgrave Publishing, 2001, pp. 222-228.

¹⁴ Philip Kotler, *Managementul Marketingului*, Teora Publishing House, 2000, pp. 497-535

- Distribution: main distributors and distribution channels, fleet, endowments;
- Marketing: direct marketing, advertising, used media, sales promotion, target market segments, etc.;
- Website: e-business, hyperlinks to other sites, number of visitors;
- Prices and discounts: price positioning and discount structure;
- Partnerships: joint ventures, licenses, affiliations;
- Export / Overseas subsidiaries: export sales-exports value, overseas locations and activities¹⁵.

C. All of the above-mentioned information gathering is in vain if the third stage, namely the data interpretation is not performed properly. The data above, put together, must tell us things that we cannot tell otherwise, any weaknesses or strengths. We can infer plans or even competitors' strategy, new products or technologies, new market entry, etc.

“If CI means to get intelligence referring to the business environment a company is interested in, competitive counterintelligence means to ensure the security of a company against the competitors' attempts to get information which later is to be transformed into intelligence. CCI also deals with the physical security of a company: documents, personnel, IT systems (INFOSEC) and communications (COMSEC)”¹⁶.

Data protection is achieved by limiting their transmission. For example, although very important to the company, an annual activity report should not be readable by suppliers or collaborators, not even by seasonal employees.

The method outlined above is a simplistic one, a starting point for the work of a CI specialist. At the same time, it can also be done inside the company without asking for outside help. Moreover, given the rapid and constant evolution of the business environment, these data are mandatory to be known no matter how big or small a company is, how new or innovative it is.

Conclusions

The lack of certainty faced by business actors and its fluctuation make the need for an adapted, stable and well-established strategy indispensable. Every department in the company offers the manager data and statistical situations, performance indicators, but for an overall view more needs to be done. Experts in Competitive Intelligence come with something extra: capitalizing on raw data and an objective understanding of these.

CI specialists work with a wide range of data, with different representations and considerations, from collecting them to turning them into intelligence, this last stage being the most difficult but most important. Generic data is filtered out by sifting relevant information, moving from quantitative to qualitative.

Developing the business environment implies, for economic actors, an intrinsic development, an update to the economic realities of the era of digitization. In order to achieve their goals and make profit, companies feel the need for forecasts and opinions about the future instead of mere information about current or past situations.

Companies must constantly adapt to what customers want and, of course, to new competitors' strategies. Whatever the objectives of an economic agent are (profit growth, higher market share, technological benefits, etc.), the essence is survival and development on a competitive market, getting a bigger market share and bringing added value on the niche where it is being operated. Particularly important to consider, is the socio-cultural element,

¹⁵ Chris West, *op. cit.*, 2001, pp. 222-226.

¹⁶ Sergiu Medar, “Why business intelligence”, in *Business/Competitive Intelligence-Magazine*, No. 1, 2012, p.7.

which can be defined as “the totality of attitudes, values, norms of conduct, behaviours and demographic trends characteristic of a given geographical area”¹⁷.

Companies with high goals, coherent and harmoniously developed principles and strategies help to create an efficient competitive business environment and the latter to develop the socio-cultural environment in which they operate.

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¹⁷ I.C. Dima, M.V. Nedelcu, *Management industrial*, Economics Collection, Național Publishing House, Bucharest, 2000, p. 74.

GENERAL CONSIDERATIONS REGARDING THE CIMIC DOCTRINE IN ROMANIA

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***Abstract:** Contemporary military operations take place in complex environments populated by different civilian and humanitarian institutions and a challenging array of issues that are not precisely „military” in nature. This has increased the importance of managing the civil-military interface, particularly that between the military and the humanitarian community. This process of management is described in Civil-Military Co-operation Doctrine. The report examines the evolution of Civil-Military Co-operation Doctrine in the Romanian Armed Forces.*

***Keywords:** Civil-Military Co-operation, doctrine, operations, NATO.*

Introduction

Civil-military cooperation (CIMIC – an acronym widely accepted and used in NATO military language) is a relatively new concept in our military culture. Although, the civil-military cooperation is not a new phenomenon, it has acquired new meanings especially after 1990. The civil-military cooperation has however occupied an important place in areas of concern to NATO multinational forces. These have arisen from the need to cooperate and provide the necessary support to both central and local public administration authorities in conflict zones and to production situations of natural disasters or disasters.

It is known that the relationship between civilians and military forces conducting operations are as old as the history of war itself. For centuries, soldiers have interacted with the civil authorities on all fronts. It is therefore logical to note that there appears to be military operation or activity that is not the employed forces. This means that CIMIC and developing the type of missions that are mobilized to participate in CIMIC forces remain an ongoing concern for NATO experts.

However, the nature of this relationship has varied and evolved over time with the evolution of the war. The biggest change was perhaps the effect of the last 25 years. Military forces have never been enthusiastic about their cooperation with the police and civil authorities, however, after the fall of the bipolar system interaction between the military and civilian authorities, this has become inevitable and constant. As a result, this has led to a new approach to civil-military cooperation.

1. CIMIC Definition

Although sometimes civil-military cooperation activities may be regarded as an ambiguous concept, it has actually resulted in the realization and coordination of humanitarian activities by military personnel. Civil-military cooperation can be defined as “all measures undertaken between commanders and national, civil, military and paramilitary”. This refers to the relationship between the armed forces, national governments and civilian populations, where the armed forces are deployed or plan to be deployed to support or carry out a

commitment. Such deployments include cooperation and coordination between commanders and agencies, non-governmental organizations and authorities or international support¹.

According to the MC 411/1², civil-military cooperation expresses “the co-ordination and co-operation in support of the mission between a NATO Commander and civil agencies, including the national population and local authorities as well as the international and national governmental and non-governmental organizations and agencies”.

Civil-military cooperation within the alliance mission is carried out in support of the military commander. This does not mean that the military forces took control over the activities of civilian agencies. CIMIC tasks are executed to accelerate the success of mission objectives and responsibilities of civil organizations through teaching appropriate and legitimate local authorities. Therefore all activities as a result of civil-military cooperation must be associated with an operational objective.

The construction of the civil-military cooperation is particularly important because it amounts to a degree of partnership and cooperation that is not universally used. It is used mainly by participants in military operations, in both military and governmental circles. The problem with using civil-military cooperation as a collective term is that it can have different interpretations.

Military's policy on civil-military cooperation, defines NATO CIMIC as “the coordination and cooperation in support of the mission between the commander and the civilian population. This includes local and central authorities, international organizations and agencies, non-governmental”³. Analyzing this definition, it can be concluded that all civil-military cooperation activities are subject to the successful completion of the mission.

Based on this definition NATO CIMIC Doctrine set conditions for the implementation of activities of civil-military cooperation. The first condition is that staff carrying out civil-military cooperation is integrated into the operational plan and act jointly in these operations. Secondly, the contribution of the civil-military cooperation activities is to carry out tasks at operational and strategic level to achieve the desired end state. Thirdly they will support the civilian authorities of the host nation to reach the final level of military stability, political and social economic sustainability. Fourth and finally, they will support local authorities in activities with the aim of transitioning the responsibilities to the local authorities and civil organisations operating in the conflict zone.

Romanian MoND has implemented the definition of CIMIC under NATO CIMIC Doctrine (AJP-9). This points out that the measures taken are subordinated to the military mission. “Civil-military cooperation/CIMIC is the specific instrument of interaction between civil and military/CMI. This ensures coordination and cooperation in support of the mission, between the commander of the military and civilians, including households and local authorities and international organizations and agencies, national and non-governmental”⁴.

On 30th June 2017, on the recommendation of the NATO Civil-Military Cooperation Centre of Excellence (CCOE) and the proposal NATO Military Committee for Standardization, all allies approved the new definition of civil-military cooperation as “a joint function comprising a set of capabilities integral to supporting the achievement of mission objectives and enabling NATO commands to participate effectively in a broad spectrum of civil-military interaction with diverse non-military actors”⁵. The development of this term was

¹ *Information Operations in Land Operations* B-GL-300-005/FP-001, Queen's Printer, Ottawa, 1998, p. 55.

² *MC 411/1, The NATO Military Policy on Civil-Military Co-operation*, available online at: <https://www.nato.int/ims/docu/mc411-1-e.htm>, accessed November 05, 2018.

³ AJP-3.4.9, *Allied Joint Doctrine for Civil-Military Cooperation*, NATO Standardization Agency (NSA), Feb 2013.

⁴ *Doctrine for Civil-Military Cooperation (CIMIC)*, Bucharest, 2013, p.15.

⁵ *CCOE successful in getting a NATO agreed status for CIMIC-related terms*, available online at: <https://www.cimic-coe.org/cimic-messenger-2017-04>, accessed November 05, 2018.

necessary for the functions of the civil-military cooperation to remain relevant in the current security environment.

2. What is the purpose of civil-military cooperation?

Typically, military forces were reluctant at first to take into account civilian factors for their missions. In the early 1990's, the evolution of the concept of civil-military cooperation in NATO has transformed this order of business. Therefore, the NATO member states held discussions about the crucial issue of whether the multinational forces should remain only "normal" military tasks "or whether they should go beyond conventional military operations, to also engage in complex public trials and seemingly infinite events unfolding outside"⁶.

According to the Doctrine for civil-military cooperation, the goals and objectives of CIMIC are "aiming for interaction between the civilian and military forces in a complex environment in order to support the master plan of the military forces"⁷. Moreover, this structure also has a significant function to determine and maintain the collaboration between military commanders, civilians and authorities in the area of operations for carrying out civilian or military arrangements that would provide moral advantages for the mission commander. The long-term goal of the civil-military cooperation in operations is to achieve and maintain arrangements that would support the military forces to achieve the objectives.

Civil-military cooperation requires the comprehensive and integrated application of all means at their disposal, military and civilian, to achieve the desired result. According to the Romanian Land Forces Operations Doctrine⁸, civil-military cooperation capabilities play a key role as a link between civil and military authorities, for obtaining civil supports for military operations and serving as the coordination of the military service and civilian authorities.

3. The contribution of civil-military cooperation in the concept of comprehensive approach

Comprehensive approach (CA) was implemented in the NATO Strategic Concept in 2010 and reaffirmed in both the Warsaw Summit in 2016 and the Brussels Summit in 2018. NATO's work will continue in accordance with the CA action plan. NATO has been working on improving its own crisis-management instruments and has reached out to strengthen its ability to work with partner countries, international organizations, non-governmental organizations and local authorities.

In particular, NATO is building closer partnerships with civilian actors that have experience and skills in areas such as institution building, development, governance, judiciary and police. There is however, within NATO, no consensus on the military contribution in terms of additional tasks or civil capabilities.

Essentially there is narrow CA concept, which focuses on enhancing the ability to interact and to promote interaction. There is also a broader CA concept that strives to equip and train military specifically for humanitarian relief, thus enabling reconstruction and development operations that allow them to conduct this humanitarian relief.

Lessons learned from NATO's operations show that addressing situations of crisis require a comprehensive approach that combines political, civilian and military input. Relying on its unique capabilities and operational experience, including expertise in civil-military

⁶ Thijs Brocades Zaalberg, "Countering insurgent-terrorism: Why NATO chose the Wrong Historical Foundation for CIMIC", *Small Wars & Insurgences* vol.17, no. 4, 2006, p. 406.

⁷ *Doctrine for Civil-Military Cooperation (CIMIC)*, Bucharest, 2013, p. 15.

⁸ *Land Forces Operations Doctrine*, Bucharest, 2017, p. II-18.

interaction, NATO can contribute to the international community's efforts to maintain peace, security and stability, in full coordination with other personnel. Military means, although essential, are not sufficient to face many complex challenges to our security. Effective implementation of a comprehensive approach to crisis requires nations, international organizations and NGO's to contribute in a combined concerted effort⁹.

From the perspective of a comprehensive approach, according to NATO, civil-military cooperation is the anchor ensuring through coordination, synchronization and reconciliation activities military and the civilian actors, given that military force can fulfill the ultimate goal. In order to harmonize the contribution of NATO forces and civilian actors operating in a theater of operations, it is necessary to develop effective relationships between them, thus contributing to the achievement of a comprehensive approach.

Addressing a modern method of conflict requires more than 'mere military defeat your opponent'. Comprehensive approach is the best way to respond to these threats and challenges. This strategic review, which requires NATO operations to contribute to a heterogeneous approach politically - civil - military crisis management by the international community, determining the need for provisions operating in this spectrum.

For this reason, the former NATO Secretary-General Jaap de Hoop Scheffer declared in 2007 that "a comprehensive approach is one that fosters cooperation and coordination between international organizations, individual states, agencies and NGOs, the private sector and the host government, and effective implementation requires the cooperation and contribution of all major actors"¹⁰.

CIMIC is a factor that facilitates this kind of comprehensive approach between NATO forces and civilian actors who together undertake to resolve a crisis data.

Changes to the Romanian Armed Forces CIMIC Doctrine of 2004 so far, express the progress achieved and interdependent operating environment valences. These include specific tasks to improve the consistent application of its instruments of crisis management by national forces, as well as dialogue and practical cooperation at all levels with international organizations, relevant NGOs and central and local authorities in the areas of crisis planning and conduct of operations.

Practical military cooperation with civil organizations, both local and central, in theaters of operations, and international, has progressed remarkably. International organizations accordingly have an increasingly greater role, essentially, the local authorities in the affected and civil society in the process of stability and crisis resolution.

In doctrine civil-military cooperation activities are outlined integrating all the necessary principles, policy planning and training needs of expressing the kind of comprehensive documents and other NATO operational level in order to facilitate civil-military interaction. This approach recommends adapting the doctrine of civil-military cooperation in various operational realities through improvisation and ensuring adaptability.

The comprehensive approach requires mutual understanding of the role of all officials belonging to the force composition both national and multinational. The Multinational Forces should facilitate and manage training through networking and balance their education at all stages and levels of training. The result would be generating a concise approach to development activities and CIMIC capabilities in the wider landscape guaranteed civil-military interaction.

⁹ A "comprehensive approach" to crises, available online at: https://www.nato.int/cps/en/natohq/topics_51633.htm?selectedLocale=en, accessed on November 02, 2018.

¹⁰ Speech by NATO Secretary General, *Conference examines role of private sector, media in "comprehensive approach" to security*, in Noordwijk aan Zee, the Netherlands, on 23 Aprilie 2007, <https://www.nato.int/docu/update/2007/04-april/e0423a.html>, accessed on November 02, 2018

4. Action planning and civil-military cooperation activities

It is imperative that the efforts of the military and civilian actors in a conflict zone are autonomous. Experiences so far in theaters of operations (Balkans, Iraq and Afghanistan) have shown that civilian and military efforts in an international crisis area should be better coordinated, and need to simultaneously meet the different roles of the different actors to ensure constant development that is necessary to the living conditions of civilians.

CIMIC is a tool by which the commander of the operations bases relationships on which he acts. These relationships are supported by those established between NATO and civilian actors from respective strategic command level and above. Although institutional relations between NATO Headquarters and some civilian actors exist, the two sides can activate less formal agreements, based on knowledge of working tools, planning and joint training activities.

CIMIC is a command function and responsibility and is part of every military mission. The growing number of civilian personnel, international organizations, NGOs and UN agencies involved in operations led by NATO, UN, EU or OSCE determines the need to integrate and coordinate civilian and military activities, in order to achieve unity of purpose and action into an area of operations.

This reality becomes complex due to the differences of values and areas of interest that different civil organizations have and therefore may compete with the military for the resources in theater. These must be managed and distributed through establishment of priorities. CIMIC specific cooperation and coordination are two crucial elements in achieving the mission, saving lives, providing humanitarian assistance, civil stopping hostilities and creating conditions for lasting peace. Military forces have legal authority or command responsibility on civil organizations.

Doctrine for civil-military cooperation is the document that outlines the guidelines in the design of the Romanian Army on civil-military cooperation in peacetime, crisis and wartime and present nature of the relationships established between the military and civilians in such situations. It also constitutes the conceptual basis for the organization, maintenance and development of CIMIC capabilities in the Romanian Army and the legal basis for regulating such activities and actions CIMIC and CIMIC missions. The doctrine of the design aspects are developed for use in combat forces. CIMIC highlights the possibility of these forces to be sized according to the specific mission and availability of CIMIC specialists to meet a variety of tasks.

Civil-military cooperation plays an important role in the entire spectrum of NATO operations. It contributes to the establishment of a stable environment in which the mission can be accomplished more easily. Indeed, a force may be at least partially dependent on civilian actors in terms of resources and information and may support the civil authorities for security in certain areas. Sometimes it may be impossible to gain complete freedom of action and movement of forces without cooperation with civilian actors. Military action in civil environment must be taken into account at all stages of an operation. CIMIC staff identifies the actions needed to maintain civilian support. Civilian and military planning effort must be coherent, harmonious and transparent at all stages of operation.

Actions of civil-military cooperation must lead to the achievement of the desired end state of the mission and the desired end state and objectives defined by CIMIC. Therefore, the work of civil-military cooperation in the field should contribute to creating, influencing and supporting fulfillment of operational objectives, based on the use of the CIMIC doctrine. Also importantly, the civil-military cooperation remains valid during all operations, the principles remain the same, but there is the possibility of changing the direction to concentrate the effort.

Doctrine shows a systematic approach to problems during CIMIC operations, both on Romanian territory and outside. The two aspects covered by CIMIC activities are to ensure the necessary coordination to support the planning and conduct of military operations and to support civil administration. The doctrine distinguishes between operations of collective defense, which requires management and operations of NATO non-Article 5, which are conducted by the UN, NATO, EU or OSCE or taking place in coalitions.

The final purpose of the existing or established cooperation and mutual support between the military institution, central or local authorities, international organizations, NGOs and civilians, is to achieve the objectives of all parties collaborating. CIMIC activities and actions support political and military objectives of the operations, which involved elements of political, military, civil and humanitarian organizations.

Conclusions

Civil-military cooperation has emerged and developed as a result of the more complex recent security environment where military operations are conducted by multinational forces and a growing number of civilian actors who have their own objectives and mandates. Joint activities between the multinational forces and civilians are leading to building and maintaining an effective link between them. Therefore it is considered in order to increase efficiency, civilian-military cooperation is necessary to go beyond the difficulties to achieve the objectives of CIMIC.

Currently, civil-military cooperation, as military function, is an integral part of modern operations. This examines all parts interacting in joint operations area and facilitates mutual assistance to civilian capabilities of military forces and vice versa.

In the current security environment, the Romanian Armed Forces will conduct operations in a multinational environment with forces of allied states and in close cooperation with national, international, governmental and nongovernmental organizations.

Finally, it is necessary to highlight that one of the biggest problems for the implementation of civil-military cooperation activities and collaboration in this area, arises from the lack of willingness to exchange information. Therefore, CIMIC is highly dependent on the skills of the staff carrying out such activities. Education and training can increase its efficiency to perform civil-military cooperation successfully, even if it does not answer to all your needs.

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HORIZONS WITH(OUT) FRONTIERS

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Abstract: *There is no doubt that the 21st Century will be the century of migration, in particular raising concerns about illegal migration, transnational threats and loss of national identity in the host countries. That is why the author argues that the coming decades will constitute of mix of challenges and opportunities. In order to face these challenges and take advantage of these opportunities, the main purpose of this paper is to respond to two broad questions: What does the influx of refugees mean for European economies, media and security and how should Europe respond to the influx?*

Keywords: *migration, media, civil society, freedom of expression, hate speech.*

Introduction

International migration is not a new phenomenon. Its basic definition comprises the transfer of people in search of better life or to escape from different threats. Human history has been shaped by migration, but this phenomenon has gained unprecedented relevance due to its size, extension and the intense interdependence between expatriates and home countries. It has immense consequences in many fields and has had a major impact on multiple sectors.

We consider that the Arab Spring has significantly impacted the evolution of border control in Europe. Dissatisfaction with the repressive regimes in places such as Libya, Syria, Egypt has inspired a movement of people from the Middle East and North Africa (MENA) region. The Arab countries are still subject to the tension process toward the democratic regimes and are far from being entirely stable. The region also faces a wide range of challenges including high youth unemployment, persistent gender differential, and increasing threats from terrorist groups such as al Qaeda and Daesh. While a number of MENA countries have shown notable progress in civil liberties with a flurry of proposed and adopted reforms toward modernization and a more democratic and open society over the past decade, most countries have remained mostly authoritarian in practice. Political scientists have long debated and opined on the several reasons behind the persistence of authoritarian regimes including the effects of Islamism, sectarianism, and ethnicity; they are, however, unanimous in the consequences. According to Freedom House - which surveys global political and human rights developments along with ratings of political rights and civil liberties - the MENA region is only five percent free and historically regarded as the least free region in the world¹. MENA regimes have increasingly shut off media for political expression and responded to protests with overwhelming force.

The 2011 Arab Spring, which was expected to encourage sweeping pro-democracy political reforms, ultimately failed to meet its intention; instead, regimes in the MENA have cracked down heavily on dissent and curtailed channels supporting freedom of expression². A challenging aspect with regard to the MENA region is linked to the balance between national

¹ "Middle East and North Africa", Freedom House, available online at: <https://freedomhouse.org/regions/middle-east-and-north-africa>, accessed in June 2018.

² Lisa Anderson, *Demystifying the Arab Spring*, Foreign Affairs, June 2011.

and regional security and fundamental rights: generally speaking, states must exercise caution when drafting legislation and policy that are “rights limiting”. They must strike a balance between protecting the safety of the state and their citizens through laws that are rights - limiting, while also safeguarding the rights and freedoms of their citizens. Only by doing so can a state ensure safety and security, while also providing rights and freedoms to its people³. However, how should the balance between limitation of freedom and security of citizens be established? What if liberty is the default position and the balance with security – a good we have instructed government to obtain – cannot be balanced? And if security becomes an “excuse” to limit someone’s freedom: where do we draw the line?

During 2015 more than one million people arrived aboard overflowing and often unseaworthy vessels crossing the Mediterranean Sea to the European Union. Global displacement stands at over 60 million people, counting refugees, asylum seekers and internally displaced people. This was the highest number since World War II⁴.

The link between migration and security has become a matter of priority on the international agenda. Migratory movements show us clearly that the Earth is shrinking concerning distances among people.

1. Implications of migration crisis for Europe

Migrations are growing because of population growth, demographic and class differences, changes in natural habitat, globalization, political and economic instability and technological advances. The main flows of migration are towards highly developed countries and areas. Due to this fact, Europe has become one of the most desired destinations, at least in recent years.

Europe is aware of its unquestioned demographic aging and the necessity of rejuvenating society by attracting targeted groups of immigrants in order to maintain current levels of development.

Integrated migrant workers are important drivers for economic growth and development. Migrants will boost Europe’s economies as workers, taxpayers and consumers, increasing aggregate demand for goods and services, including those provided to the migrant populations⁵.

Of course, we cannot ignore that the current crisis is squeezing the public finances of many European countries, particularly those at the front line.

Despite the costs, it is widely held that for most countries, integrated migrants provide more in taxes and social contributions than they receive in individual benefits. The overall effect of a large number of migrants on Euro zone public finances, pensions, demographics and potential growth should be positive.

Although migration is part of this solution to ensure economic sustainability and development it can be seen as double-edged sword because migrants represent a challenge for development in the European Union.

The EU is at a crossroads because it has to harmonize a number of multidimensional platforms in the matter of migration, such as:

- Migration policies acceptable to all member states;

³ Stephen Rogers, *Striking a balance between fundamental rights and national security*, Liberated Arts, Issue 1, vol. 2, 2016, available online at: <https://ir.lib.uwo.ca/lajur/vol2/iss1/7/>, accessed in August 2018.

⁴ ‘Unprecedented’ 65 million people displaced by war and persecution in 2015 - UN, UN Refugees and Migrants, June 20, 2016, available online at: <https://refugeesmigrants.un.org/%E2%80%98unprecedented%E2%80%99-65-million-people-displaced-war-and-persecution-2015-%E2%80%93-un>, accessed in October 2018.

⁵ *Managing the EU migration crisis, From panic to planning*, EYGM Limited, UK, 2016, available online at: <https://www.ey.com/Publication/vwLUAssets/ey-managing-the-eu-migration-crisis/%24FILE/ey-managing-the-eu-migration-crisis.pdf>, accessed in August 2018.

- Development and health care aspects of migration;
- Respect and protection of human rights;
- Absorption capacities for accepting migrants;
- Illegal migration and related crime;
- Common mechanisms between member states;
- Implications of radicalization and xenophobia;
- Terrorism.

A particular challenge is the need to integrate immigrants and their acceptance of the values of the host countries.

The EU has done much to discuss migration in the past couple of decades, discourse is still being conducted on the question of whether immigration is primarily an obligation of law enforcement. That approach is wrong since it is first a political issue, but also an economic one. Migration becomes the top security issue only when all others field (political and economic) have failed to deal with it.

2. Call to action for different national and international actors

Taking into account the complexity of the issues, no single national and international actor can tackle the migration crisis alone. Multi-sector collaboration is essential to grip the combined resources and expertise of local governments, the media and civil society groups. Policymakers and leaders from all sectors must work together to develop solutions, examine what works and what does not, and adapt their approaches accordingly, such as: tailoring existing training materials to the local and regional context and developing training curricula for different targets, including: journalists and media professionals; teachers, professionals working with youth; social workers, members of civil society organizations, etc.; Law enforcement authorities, judges and prosecutors; officers of local administrations, Ombudsman, policy makers etc.

2.1. Local governments

Local governments should implement the following policies:

- a greater commitment to preventive integration measures, taking into account different immigrant profiles and their asymmetric distribution;
- common action between central political power, security forces, local authorities, citizens' associations and nongovernmental organization;
- knowledge sharing and information exchange between migrants and non-migrants, by drafting guidelines on language, religion and culture;
- ensuring the implementation of / compliance with main international instruments;
- establishing to investigate cases of violation of fundamental rights - where human rights councils are already established, monitoring action to assess their independence should be ensured;
- optimize the use of EU funds for asylum and migration.

2.2. The media

While the set of initiatives and the general awareness on this topic in the MENA region is still on a different level than in other parts of the globe, there is an increasing attention to such phenomenon. This is also related the role of the MENA region in the current international scenario, where the migrations flow and its difficult management within Europe, the terrorist attacks claimed by Daesh all over the world, the raise of new xenophobic movements together with sentiments of Islamophobia are spreading a general sentiment of insecurity and fear of the "otherness". Online and offline hate propaganda, violence, hostility

and intimidation directed towards people because of their identity/perceived difference are a serious growing threat, furthermore they have strong inter-dependencies with other relevant criminal phenomena.

To understand public opinion about immigration in Europe, one has to understand the media's role in it. Despite differences in the way immigration and migrant groups are represented in European media, we can observe common patterns. Migrants are generally under-represented and shown as delinquents or criminals. Although, media framing differs based on specific migrant groups the discourse is focusing on, immigration coverage is often negative and conflict-centered. Frequent exposure to such media messages leads to negative attitudes towards migration, may activate stereotypical cognition of migrant groups, and even influence vote choice.

Even though the media themselves rarely produce forms of hate speech, unless they act as vehicle for hatred contents, the hate speech encountered on social platforms is often fed by bad or fake news⁶. The accuracy of the information can be an antidote to hatred and, at the same time, contribute to build a sense of critical thinking and inclusiveness in the society. Journalists, editors and all the actors involved can play a crucial role in filtering bad and fake news, even though this is not enough. They have to dialogue with all the other stakeholders, including the politicians. Moreover, the media can be crucial in fighting hatred contents by promoting a counter narrative. These alternative narratives should include all relevant actors from the institutional arena as well as from the civil society.

Therefore, the media has an important impact on the lives of migrants, asylum seekers and refugees and their degree of integration into society and their acceptance by the society. Although there should be no unjustified restrictions on freedom of expression, the media has a responsibility to accurately describe the situation of migrants, asylum seekers and refugees and reflect their positive contribution to the society they live in. Sometimes, media link asylum-seekers and immigrants with insecurity, socio-cultural threat, or economic impacts, or dehumanize migrants through metaphors of "insects" and "natural disasters"⁷. Other times, they may use humanitarian language that emphasizes migrants' vulnerability and status as victims⁸. It's also important to highlight how migrants themselves produce and share content alongside conventional media, as seen in studies about immigrant journalism. Also, the media has a responsibility to avoid the stereotypes of these people, which can contribute to discrimination, racism, xenophobia and other forms of intolerance in society⁹. The opportunities of integration of refugees and migrants into national/European societies interweave with small and large scale changes and potential risks within specific countries and across the continent. Both opportunities and risks should be seen in the context of global

⁶ Janna Anderson, Lee Rainie, *The Future of Truth and Misinformation Online*, Pew Research Center, October 19, 2017, available online at: <http://www.pewinternet.org/2017/10/19/the-future-of-truth-and-misinformation-online/>, accessed in July 2018.

⁷ Marianna Karakoulaki, Laura Southgate, Jakob Steiner, *Migration in the Twenty-First Century*, Research Gate, January 2018, available online at: https://www.researchgate.net/profile/Susana_Ferreira28/publication/327847553_From_narratives_to_perceptions_in_the_securing_of_the_migratory_crisis_in_Europe/links/5ba920e092851ca9ed2253da/From-narratives-to-perceptions-in-the-securing-of-the-migratory-crisis-in-Europe.pdf?origin=publication_detail, accessed in October 2018; David Shariatmadari, *Swarms, floods and marauders: the toxic metaphors of the migration debate*, The Guardian, August 10, 2015, available online at: <https://www.theguardian.com/commentisfree/2015/aug/10/migration-debate-metaphors-swarms-floods-marauders-migrants>, accessed in October 2018.

⁸ *Addressing vulnerabilities associated with migration*, Global Migration Group, 2016, available online at: <http://www.globalmigrationgroup.org/theme/addressing-vulnerabilities-associated-migration>, accessed in May 2018.

⁹ Tana de Zulueta, *The image of asylum-seekers, migrants and refugees in the media*, Doc. 1101, Committee on migration, Refugees and Population, 10 July 2006, available online at: <http://www.assembly.coe.int/nw/xml/XRef/X2H-Xref-ViewHTML.asp?FileID=6751&lang=en>, accessed in June 2018.

and historical developments. The role of the media emerges as crucial in providing a platform for those complex issues to be unpacked and presented to the public.

The media should collaborate with other European and international institutions in order to:

- develop campaigns to promote inclusiveness in the media;
- develop training and workshops for journalist to enhance professional understanding of reasons behind refugee and migrant mobility;
- organizing workshops on fighting hate speech and media tools;
- encourage the publication of more politically neutral neighborhood newspapers that would focus on its neighborhood issues and give a voice to people of various backgrounds and promoting citizens' journalism;
- foster media coverage on migrant communities so that diversity of the countries would be reflected;
- use the voices of migrants and refugees (by giving examples) in order to promote their communities and not to portray them only as victims or perpetrators of crime and terrorism;
- disseminate research on media coverage of migration and share research findings.

2.3. Civil society groups

In the case of migration civil society groups should provide a crucial link between governments and the communities they represent in order to:

- encourage innovation to solve long term problems that refugees and host countries face;
- help to bring reception conditions in line with the quality standards at the European and national level;
- facilitate the cooperation and exchange of feedback with civil society organizations, and other public human rights groups, nationally and internationally;
- develop other partnership agreement with international organizations to provide free assistance to more vulnerable groups or individuals;
- help migrants to find new employment and business opportunities;
- inform the local governments on labor market needs, education and integration planning;
- ensure networking activities, through workshops and virtual platforms, among professionals in different fields;
- inform the public debate and help affect more positive societal attitudes towards refugees.

Conclusions

International migration is one of the major moral and political challenges of our time. Therefore, implementing these policies will not be easy, because they require a difficult balance among conflicting factors: economic interests, moral issues, humanitarian considerations and the fears and legitimate concerns of establish populations. Governments will encounter popular resistance to the imposition of some solutions and will risk electoral backlash and violent reaction by extremist domestic minorities. Information campaigns, international collaboration and open discussions with civil society groups will be necessary to create a social atmosphere receptive to the required changes that will give refugees room to rebuild their lives and become productive members of our societies. Migrants have an essential role to play in our societies and economies and we cannot afford to allow the advocates of racism and intolerance undermine our democratic values and negate the human

dignity we owe to everyone whatever their nationality, origin or race. Promoting interaction between migrants and host societies will, through greater mutual understanding, help break down and dispel xenophobic sentiment.

To enable immigrants to feel part of our society we must treat them fairly, and ensure that they have proper tools to participate fully in our societies. By introducing and discussing the possibility of a right to mobility, it calls for an opening, not only of national borders, but also of the eyes and minds of all those interested in the future of international migration in a globalizing world. For this purpose the European Union has been developing an increasing number of policy initiatives in the field of immigration and integration. Integration of immigrants is vital for social cohesion and economic development. Sending countries benefit increasingly from remittance payments and the return of skilled migrants, receiving countries benefit from younger workforces, and migrants themselves find new opportunities through their move to a new country. Migration redistributes wealth at the world level and plays a central role in development and poverty reduction. Moreover, within the current globalization process, which favour an increasingly free circulation of goods, information and capital, it is worth considering including free movement of human beings as well. Integration is a continuous, two-way process based on mutual rights and obligations on the part of both the immigrants and the host society.

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DEFENSIVE STRATEGY OF SMALL COUNTRIES. THE CASE OF ROMANIA

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***Abstract:** After World War I and the Great Union of 1918, Romanian leaders were required to act for the recognition of the new frontiers by the great powers, counteracting the revisionist states and building regional alliances alongside the traditional alliance with the Western powers to guarantee stability in the region. Along the same line, the Royal Romanian House engages in the same strategy through matrimonial alliances with the royal houses of Greece and Yugoslavia. Romania adopts a security strategy characteristic for small countries, suitable to respond to the threats of revisionist states.*

In the post-war period, Romania enters the sphere of Soviet influence and is part of the Warsaw Treaty organization for continental security. After the collapse of the communist system and the security organization, Romania is making every effort to join NATO and the EU in order to ensure national security.

***Keywords:** small country, strategy, energy resources, geopolitical silence, energy aggression.*

Introductory considerations

States, depending on their geographic location, the population they have, and neighboring countries, adopt different security and eventually survival strategies. Large states have adopted offensive or defensive strategies in line with its regional or continental interests, but the smaller ones have permanently adopted defensive strategies, corroborated with a policy of regional alliances or alliances with the great powers. The 20th century brought great powers to share the spheres of influence through which the small states were - negotiated, divided, dismantled - according to the interests of the great. After the second world conflagration when the emergence of atomic weapons made European states polarize in an ideological block - those in the East in the Warsaw Treaty and those in the West in NATO -, the voice of the small states has not been heard with small exceptions. By 1989, the status quo was maintained between the two blocks, but after the collapse of the USSR, the small eastern states have made a strategic goal of joining NATO for the preservation of security.

1. The strategy of large countries

Large countries with a large population have always had an offensive attitude in history. Descending in history to the ancient empires we will see that they tended to occupy the provinces near the borders for their economic importance or to eliminate the threats to hegemony. Sometimes this did not succeed from the first attempt as it happened during the wars between the Roman Empire and Carthage, or the same Roman Empire and Dacia. Between the wars waged with each of regional powers, the Roman Empire recourse to diplomacy to gain the time needed to regroup troops, build roads, bridges, and a fleet to achieve the superiority needed to defeat the enemy. Last but not least, they were building an

alliance to disperse the defense of the state concerned. This pattern of action was preserved until the nineteenth century when it came to Europe after Napoleon's defeat, the 1815 Congress in Vienna - also known as the "European Concert" - through which the European powers cooperated each other to maintain a balance in the continent.

Throughout the 19th century, European powers had some conflicts between them on the one hand to dismantle the Ottoman Empire - the sick man of Europe - and on the other to strengthen their power and influence other powers. European powers also use diplomacy in addition to open conflict to build barriers to the expansion of other powers. Thus, in order to maintain the balance in Eastern Europe between the Tsarist and Ottoman Empires, Western powers intervene in helping the Ottomans in the Crimean War. And through the Paris Peace Congress of 1856 it is decided to unite the Romanian Countries under the protection of the great powers to create a buffer zone at the mouths of the Danube between the Ottoman and Tsarist Empires. Two other buffer zones were created between France and Prussia through the independence of Belgium in 1830 and between France and the Habsburg Empire by the unification of Italy.

At the end of the 19th century and the beginning of the 20th century, two antagonistic alliances were created on the European continent: the Triple Alliance or the Central Powers and the Entente or the Triple Understanding. The industrialization of the great powers and the formation of mass armies make these alliances necessary to maintain a balance on the continent. The arms race between the two alliances will eventually lead to the outbreak of World War I and the participation of other two powers - Japan and the United States - located outside the European continent. The Entente's victory will lead to the collapse of the three central empires - Germany, Austro-Hungary and the Ottoman Empire - and the constitution of national states in Eastern Europe.

At the end of the fourteenth decade of the twentieth century following the return of Germany to the European political scene and to avoid a conflict between the great powers, the Munich Accords were signed, giving way to the German revisionist claims, and in 1939 the Ribbentrop - Molotov Treaty, the preamble of the World War. After the Second World War and the emergence of nuclear weapons, decisions are made by the two superpowers - the USSR and the US. European states polarize around the ideological poles represented by the two powers on the "Iron Curtain" line. After the collapse of the Soviet Union and the demolition of the Iron Curtain, Eastern countries joined NATO to preserve their security against any threat.

As strategies of large states identified throughout history:

- Direct offensive against a small state;
- Direct offensive, repeated in several campaigns in co-operation with joint allies;
- Cooperation between the great powers to maintain a balance on the continent;
- Creating buffer zones - made up of small states - to avoid direct attack between large countries;
- Creating conjectural alliances between the great powers to avoid that a great power extends its power to the detriment of another;
- Create long-term defensive alliances between major European powers to maintain the status quo;
- Establishing spheres of influence between major powers;
- The division of Europe into two ideological and military blocks, the establishment of a cold war between the two nuclear superpowers.

2. The strategy of small countries

Small countries have permanently defensive security strategies because of the asymmetric power ratio between them and the great powers. As a defense strategy, small states have used primarily diplomacy, obviously used to juggle between law and armed force and to reduce losses. Sometimes small states have managed to maintain their territorial integrity by paying this privilege with resources or money or they have given up the sovereignty of territories in favor of the bigger one. The establishment of regional alliances between small states in contrast with a large state was frequently used as a strategy. Armed resistance as the last solution can be divided into two: short-term resistance followed by negotiations or long-lasting resilience, continuing after the occupation of the territory. Also, the matrimonial alliance between royal houses was frequently used in Europe to strengthen a political alliance between states but disappeared in the mid-twentieth century.

As strategies of small states identified throughout history:

- Trying to avoid conflict by negotiation - paying tribute, granting economic or political privileges;
- Constitution of regional alliances between small states;
- The establishment of an alliance with regional power or great power to counter the power that threatens the small state;
- Armed resistance;
- The matrimonial alliance between royal homes.

In the modern age, small states have joined with the great powers to guarantee their territory, and have completed their national territory. In the twentieth century the international institutions emerged that put the small countries on an equal level with the great powers. Thus, after the World War I, the League of Nations emerged with the “*purpose of preventing war and guaranteeing peace*”¹ and after the World War II, the United Nations emerged. Small states have been very active in both organizations because they were the only international bodies fighting for respect for treaties and status quo.

3. The case of Romania

The history of the Romanian lands is full of asymmetric conflicts with ascended powers at a certain moment or with the empires of the region. Negotiations were short-lived and under the threat of imminent invasion and obviously “*the leaders of the citadels act by relying on power, and the weak are obedient to them*”² as Thucydides says. If the conflict was inevitable, the rulers applied a strategy that was constantly improved and adapted so that they could face a superior numerical enemy. In the fourteenth and fifteenth centuries, this strategy is limited to: “*the non-acceptance of the direct confrontation in the conditions of the deployment of the large army; obligation of this army to seek the small army, following long itineraries, in which it is subject to wear and exhaustion of forces; attracting the large army to unfavorable places, where it is possible to apply a decisive strike*”³.

Since the formation of the modern Romanian State in 1859, the strategy used for survival was to negotiate with the great powers, to ally with Russia against the Ottoman Empire in 1877, then with the Austro-Hungarian Empire (the one with most Romanian provinces and the largest Romanian population) against Russia in 1883. In 1914, when the Great War began, Romanian politicians decided to neutralize the alliance with the Central

¹ D. Gusti, „Problema Societății Națiunilor”, in *Cele Trei Crișuri*, no. 1-2, Oradea, 1929, p. 4.

² Thucydides, *Războiul Peloponesiac*, Scientific Publishing house, Bucharest, 1966, p. 512.

³ Mircea Malița, *Strategii de supraviețuire în istoria poporului român*, 2nd edition, Compania Publishing House, Bucharest, 2012, p. 27.

Powers and to fight alongside the Entente for the liberation of the historic provinces across the mountains. The strategy used was to join an alliance of great powers to guarantee the recovery of provinces under Austro-Hungarian domination. The most important fact is that in 1918 the provinces that united with Romania did not do so by force of arms but by the vote of the people's representatives in full agreement with Wilson's point 10 of 14 concerning the right to self-determination of the peoples of the Austro-Hungarian Empire.

3.1. Strategy in the interwar period

The end of the world war did not mean for Romania the end of the battles. On the military level, the fighting in Transylvania continues against the Bolshevik troops of Bela Kun and on the Dniester River with bands of Bolshevik Revolutionary. On the diplomatic level, the representatives of Romania carry out at the Peace Conference in Paris a struggle for the recognition of the Union and the rights of the Romanians to self-determination according to Wilson's 14 Points. Ion I.C. Brătianu and the other representatives of the small countries make an anteroom in the hall where the representatives of the great powers decided where the borders of the Eastern states were drawn. This diplomatic struggle for the recognition of the Union takes place throughout the interwar period. From the Tribune of the League of Nations, representatives of Romania - especially Nicolae Titulescu - fight for the observance of the treaties that emerged following the Peace Conference in Paris, for outlawing war as a means of resolving conflicts, condemning aggression, etc.

The Romanian diplomacy participates in the organization of two regional alliances - the Little Entente alongside Yugoslavia and Czechoslovakia and the Balkan Understanding alongside Yugoslavia, Greece and Turkey - to counter the revisionist claims of Bulgaria and Hungary. These regional alliances of small countries have played a role in enhancing regional security throughout the interwar period. Both alliances broke up around the Second World War following the interventions of the great powers in the region.

An additional element of the strategy during the interwar period are the matrimonial alliances of the Royal House of Romania with the Royal House of Greece and Yugoslavia. Thus, the future King Carol II marries Princess Elena of Greece, Princess Elizabeth of Romania marries the future King George II of Greece, and Princess Maria of Romania marries King Alexander I of Yugoslavia. Queen Mary was also called "Balkan mother-in-law" for these matrimonial alliances. Marriages took place with the consent of the governments of the three countries and had a political role. These matrimonial alliances were not lasting: Carol II leaves Princess Elena for Elena Lupescu, George II is deposed two years after he ascends to the throne and divorces from Elisabeth, King Alexander I is assassinated in 1934 at Marseille.

The Romanian diplomacy tried in the interwar period to establish diplomatic ties with the Soviet Union and this to recognize the unification of Bessarabia with Romania. The Soviets did not recognize the union, and the Ribbentrop-Molotov Pact shared their spheres of interest with Germany and expressed their interest in Bessarabia.

At the end of the interwar period, all these points of Romania's security strategy collapsed, because: the League of Nations had become an organization without content, the aggressive states were leaving the organization one by one; regional alliances disappeared under the bumps of revisionist states; the alliance with the Western powers collapsed following the surrender of France in 1940. This collapse of the security strategy led to the loss of the provinces of Bessarabia, Bukovina, northwestern Transylvania and Quadrilater. And these losses pushed Romania into an alliance with the only power that guaranteed its new borders - Germany.

3.2. Strategy in the post-war period

The end of the Second World War finds Romania in the sphere of Soviet influence and will be part of the Communist bloc. Obviously, the data of the problem changes because the strategy is no longer decided by the Romanian authorities, but it is the strategy of the entire Communist bloc. This state of affairs continues until the collapse of the communist system. There have been some notable attempts to delimit Romania from the Communist bloc. First, following the 1962 Cuban Missile Crisis when Romanian officials announce the United States and NATO implicitly that the Romanian state does not hold atomic weapons and should not be considered an enemy of America. A second delimitation attempt is that of 1968 when it does not intervene in the invasion of Czechoslovakia with the allies of the Warsaw Treaty. This time is a delimitation within our own alliance by those who could invade Romania as well. Romania is very active at the UN during the communist period, on the one hand, in order to increase the prestige of the communist people and on the other hand to emphasize its independence from the Soviet bloc.

Following the collapse of the Communist system and the dismemberment of the USSR, Eastern Europe becomes a security area. The dismantling of Yugoslavia and the conflict that accompanies it brings war on Romania's borders. Conflict triggered in Transdnier and the situation in the new independent republics detached from the USSR practically encircle Romania in a region of insecurity. Romania's strategic decision to join NATO to ensure security and the European Union for economic integration has reduced the threats to national security.

3.3. The current strategy and threats

The current threats to Romania's security are brought about by the fact that the Eastern border coincides with the borders of the European Union and NATO. Stopping the expansion of the two organizations at the Eastern border of Romania and reactivating Russia's military power will increase frictions on the geopolitical gap between the West and the East. Frictions were triggered after the NATO summit in Bucharest in 2008 refusing to admit Ukraine to the alliance, and they were reinforced after the annexation of Crimea by Russia in 2014 and the start of the conflict in eastern Ukraine⁴. The disruption of *geopolitical silence*⁵ at the NATO border can pose a threat to Romania's security. This has intensified joint exercises, the presence of Black Sea alliance ships and defense spending. Within the Strategic Partnership with the United States, Romania has stepped up its national defense activities by installing the anti-missile shield and investing in modern equipment.

Accession to NATO did not mark the end of Romania's efforts to increase security. Placing under the alliance security shield involves an obligation to contribute to the safety of allies not just to benefit from their help. For this, Romania adopted a Defense Strategy and the White Paper on Defense to optimize the national defense system with that of NATO, to increase the level of endowment (as a result of increasing the defense budget to 2% of GDP) to increase the capacity of intervention within the alliance. Threats to security are no longer just in defense as in the past centuries, but in the economic field. The globalization of the world economy has led to the interdependence of national economies through trade in goods and services. At present, there are no autocratic economies - perhaps except North Korea - and no matter if we are thinking of importing rocket technology. The modern economy is highly dependent on energy resources, generally oil and gas, to be transported over long distances. In the past centuries, when security and state survival depended on a political-military alliance, energy security can be put in the first place because *energy*

⁴ S. Neguț, *Geopolitica*, Meteor Press Publishing house, Bucharest, 2015, p. 416.

⁵ *Status quo* on the geopolitical boundary where the great powers do not act to change the area of influence.

*aggression*⁶ can be camouflaged as a renegotiation of an economic contract or environmental protection without it may take military threats at the border. An example of this is the renegotiation of the gas supply contract between Ukraine and Russia in the winter of “Ukrainian”, when Russia interrupted Ukraine’s gas supply by forcing it to accept the price increase.

Another threat to energy security can come from Turkey. It has the way of entering the Black Sea - the Bosphorus and the Dardanelles - and can limit the access of the oil tankers to this sea due to the agglomeration of the straits and the protection of the environment against oil pollution. The Turk Stream⁷ pipeline from where resources will come to the BRUA gas pipeline is on Turkish territory and the potential for political instability in Ankara are threats to the energy security of the entire region. Romania, on the background of exhaustion of onshore energy resources, increases dependence on offshore resources in the Black Sea and imports. The response to this economic threat is the diversification of oil and gas supplies, renewable energy production, investment in underground gas storage, the modernization of coal-fired power plants, exploration and exploitation of resources in the exclusive economic zone of Romania Black Sea.

Conclusions

Romania has followed a specific defensive strategy for small countries - diplomacy, regional alliances and alliances with great powers - to ensure national security. Diplomacy and work in international organizations, League of Nations and the United Nations for the observance of treaties and peacekeeping.

Accession to NATO and the European Union has increased the security of Romania and of the whole region. There are currently security threats due to the conflict in Ukraine and the annexation of Crimea by Russia. These are attenuated by NATO membership and allied troop participation in the provision of national air and naval space.

The globalization of the economy and the interdependence of national economies are the threats of the 21st century precisely through dependence on the international flow of goods, services and energy resources. The most important threat is currently on energy security from the point of view of the security of supply with energy resources, but new discoveries of natural gas in the Black Sea can also mitigate this threat.

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6. ***, *Project the Turk Stream Pipeline*, <http://turkstream.info/project>.

⁶ If war is a continuation of politics by other means, the energy conflict is a continuation of camouflaged politics in the form of economic or environmental decisions. Thus (in context) a natural gas price based on friendship with the supplier is camouflaged in the form of economic terms - market, demand and offer, etc.

⁷ *Project The Turk Stream Pipeline*, available online at: <http://turkstream.info/project>, accessed on September 27, 2018.

GEOSPATIAL INFORMATION SYSTEMS (GIS) IN MILITARY OPERATIONS

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Abstract: *The way in which the military plans, functions and operates has been revolutionized by the usage of GIS applications in military operations. From home security to operations around the globe, military depends on reliable, accurate spatial mapping and tools. Military forces use GIS in a variety of applications including cartography, intelligence, terrain analysis, battlefield management, remote sensing, military installation, management and monitoring of possible terrorist activity. The concept of Command, Control, Communication and Coordination in military operations is largely dependent on the availability of accurate, spatial information in order to take quick decisions for operational orders. In the present digital era, GIS is an excellent tool for military commanders in operations.*

Keywords: *GIS, geospatial, imagery, remote sensing, intelligence, military operations, terrain analysis.*

Introduction

“Everything happens somewhere”

A geospatial information system (GIS) is a system that is composed by software, hardware, and data, portraying geographically referenced information. It gives the user the ability to reveal relationships and patterns which, in the end, reveals solutions to different problems, by visualizing, interpreting and manipulating the spatial knowledge consisting of geospatially referenced data. The solutions can then be presented by the user in easily understood forms (digital or analog), such as maps, animations, charts or reports. Therefore, through GIS the uncertainty for a decision-maker is drastically reduced. GIS provides a foundation for map and data production which allows users to add different data sources, like imagery (satellite or UAV), weather information, as new layers into a geo-database¹. The geo-database can be distributed across different networks of any associated users (i.e. geospatial analyst down to the warfighter) and, as a result, a common spatial capability may be achieved by all defense and intelligence domains.

Spatial information has always been important to military commanders². The defense sector fulfills a variety of requirements through the use of GIS. This includes, but not resumes, to the following:

- Digitization of paper maps,
- Terrain analysis,

¹ A way to store GIS information consisting of vectors (point, polygon, and/or polyline layers), as well as different types of rasters (imagery).

² Even the most famous ancient military general and tactician, Sun Tzu (544-496 BC) dedicated an entire chapter to terrain and the appropriate, associated tactics and strategies, in its book ‘Art of War’ which is still an important lecture in all military schools over the world.

- Remote sensing,
- Route optimization.

GIS provides the tools to analyze and present data for accurate decision making for all those working on military operations. Military personnel heavily rely on geospatial awareness for almost every aspect of operations. Geospatial information plays a strategic role from mission command to intelligence, from surveillance and reconnaissance (ISR) to training area or facility management and mission support. GIS is having a very important role in helping the commander to understand the influence of terrain on the conduct of the battle. Also, GIS is an undisputable instrument into maintaining the situational awareness. Military agencies require permanently detailed knowledge about their areas of responsibility and interest, in order to improve their assessment and, furthermore, their response and decision-making process. All the nations are aware about the need to understand how their soldiers can be kept informed about the location of the own troops or enemy alike. The ability to obtain this information, analyze it and produce a report for decision makers has been greatly enhanced by GIS.

An important aspect of GIS is the ability to “ingest” and “fuse” geospatial data with many other forms of intelligence collection, such as signals intelligence (SIGINT³), measurement and signature intelligence (MASINT⁴), human intelligence (HUMINT⁵) and open source intelligence (OSINT⁶).

1. GIS in Intelligence – GEOINT

“Know the weather, know the terrain and your victory will be complete”.
Sun Tzu, 500 B.C.

When we are talking about GIS and intelligence, this mix is revealing the concept of Geospatial Intelligence (GEOINT). GEOINT gives to the customer an intelligence product which visually depicts physical features and geographically referenced activity on or just below the earth’s surface. It can combine IMINT⁷ products taken from a range of collection platforms⁸, with mapping or other geospatial data, allowing the analyst to detect physical change over a period of time. Change detection can be as simple as disturbed earth but may answer an information request relating to local activity. Common uses of GEOINT include

³ “Signals intelligence is intelligence derived from communications, electronic, and foreign instrumentation signals (JP 2-0). SIGINT provides unique intelligence information, complements intelligence derived from other sources, and is often used for cueing other sensors to potential targets of interest. For example, SIGINT, which identifies activities of interest, may be used to cue GEOINT to confirm that activity. Conversely, changes detected by GEOINT can cue SIGINT collection. The discipline is subdivided into three subcategories: communications intelligence (also called COMINT), ELINT, and foreign instrumentation signals intelligence (also called FISINT)”, available online at: https://fas.org/irp/doddir/army/adp2_0.pdf, accessed on October 20, 2018.

⁴ “Measurement and signature intelligence is information produced by quantitative and qualitative analysis of physical attributes of targets and events to characterize, locate, and identify targets and events, and derived from specialized, technically derived measurements of physical phenomenon intrinsic to an object or event”, available online at: https://fas.org/irp/doddir/army/adp2_0.pdf, accessed on October 20, 2018.

⁵ “Human intelligence is the collection by a trained human intelligence collector of foreign information from people and multimedia to identify elements, intentions, composition, strength, dispositions, tactics, equipment, and capabilities”, available online at: https://fas.org/irp/doddir/army/adp2_0.pdf, accessed on October 20, 2018.

⁶ “Open-source intelligence is intelligence that is produced from publicly available information and is collected, exploited, and disseminated in a timely manner to an appropriate audience for the purpose of addressing a specific intelligence requirement”, available online at: https://fas.org/irp/doddir/army/adp2_0.pdf, accessed on October 20, 2018.

⁷ “An intelligence gathering discipline which collects information via satellite and aerial photography”. Wikipedia.

⁸ UAVs, aerial ISR platforms, government satellites and even commercial satellite imagery.

identification of patterns of activity (such as movement of people or vehicles over an area over a period of time) or even intelligence preparation of the battlespace (IPB) support to military operations.

As military operations may often occur into unfamiliar places, geospatial tools become a more and more critical part of the intelligence mission. GIS helps intelligence analysts to rapidly identify the landscape and environments that could be factors in relevant operational factors. GIS help increase a leader's understanding and knowledge of the impact of terrain and weather in the operating environment, ultimately enabling informed command decisions. It enables geospatial engineers, GEOINT professionals, and analysts at various echelons to create tactic, operational and strategic decision aids in support of the Operational Planning Process (OPP)⁹, IPB and troop leading procedures (TLP).

The IPB first step is to define the environment and to describe its effects in operations. This is one of the first moments when GIS comes into the help of the geospatial analyst to analyze all the *OCOKA*¹⁰ factors, using specific tools and all the available geospatial data, finally producing the *MCOO*¹¹, the product from which all the other processes start to be developed.

In order to develop a straight-forward product such as MCOO, the geospatial analyst has to develop many other mission tailored products:

- Cross-country mobility (*CCM*¹²) analysis to identify key terrain (K), the mobility corridors (MC) and furthermore the Avenues of Approach (AA). The modern battlefield is highly mechanized. Any armored column mobility depends upon the terrain conditions. Topography, soil type, land use and land cover are parameters with direct impact on the mobility, imposing different methods of crossing obstacles and forcing wisely selection of tactically important areas etc. Generally, military vehicles are classified into two wide categories, tracked and wheeled. Tracked vehicles, like tanks, possess excellent cross-country mobility. Wheeled vehicles do need careful route planning before cross-country movement can be attempted, as they are the ones which are carrying essential war stores like ammunition, fuel and other supplies.

- visibility and intervisibility (IV) analysis¹³ to identify areas of cover and concealment and therefore reveal the best suited locations for observation posts (OP), the best locations for communication relays/antennas or the Fields of Fire (FoF) of different weapons systems. One thing to be mentioned here is that the geospatial analyst is not limited to the bi-dimensional (2D) realm. Moreover, the geospatial analyst can take his analysis to a new level, opening new uses by stepping from 2D into tri-dimensional (3D) realm. Of course, this will require a more powerful workstation as well as a complete new set of geospatial skills.

- Linear Line of Sight (LoS) is a point to point visibility between one or more observers, and one or more targets. Each observer and target pair is a unique line of sight between them

Radial LoS (also known as Viewshed), calculates the visibility of an area from one or more observer locations. The results show which areas are visible (or not) to one or more observers. 2D viewsheds can be visualized in 3D as well and even further transposed into a full 3D threat-dome useful for air assets in order to plan their mission so that they can avoid detection or/and engagement from terrestrial systems;

⁹ COPD v. 2.0, 2013.

¹⁰ Observation and Fields of Fire, Cover and Concealment, Obstacles, Key terrain, Avenues of Approach.

¹¹ Modified Combined Obstacles Overlay.

¹² a laborious product which takes in consideration the properties of soil, vegetation, elevation (slopes), hydrography, weather (wet, dry, cold, hot etc.) as well as the category of the vehicle (tracked or wheeled etc.).

¹³ Linear line of sights (LoS) (or radial, called viewshed).

- Manipulation of the elevation data (DEM) in order to get the slope (used in CCM products), the aspect or the hill shade of the terrain.

Besides the above mentioned products, there are others that can be developed through a GIS by the proficient geospatial analysts:

- Thematic maps – map population density (religion, ethnicity etc.);
- Cluster analysis: density and heat maps (revealing hotspots);
- Map key infrastructure;
- Drop zone suitability analysis;
- Helicopter landing zone (HLZ) analysis – the helipad location depends on the tree cover, slope of the ground, soil conditions as well as the presence of other obstacles such as electricity poles;
- Map battle damage assessment (BDA);
- Route analysis (a more concealed longer route versus a shorter more direct route that leaves the troops exposed to enemy fire) – the roads and tracks which point towards bridge or ferry sites are usually considered important especially from the tactical perspective;
- Site selection for launching bridges – there are two main types of bridges which are generally employed by military:
 - Wet bridges – these are built across the rivers or large water bodies (where can float);
 - Dry bridges are provided for the other small water bodies (canals and drains) having fixed specifications of span, bank conditions and launching slope. Therefore, in order to identify a suitable site these requirements have to be met;
- Incident or/and pattern of life analysis;
- Time event charts,
- Sun position analysis (specific dates, times, and locations hillshade product) used to visualize potential locations where the adversary can deploy personnel and equipment to avoid detection from intelligence, surveillance, and reconnaissance assets;
- Map ranges of SIGINT assets,
- Beach landing maps used to plan and execute amphibious operations by revealing the location of physical hazards that could affect the operation, represented by features such as: reefs, rocks, and dense vegetation which could hamper the mission's effectiveness, cause damage or harm to equipment and personnel, and waste precious time.

GIS has applicability on Civil-Military (CIMIC) Operations as well, starting from collecting (using interactive geospatial survey¹⁴ forms) to managing and visualizing civil affairs levels of engagements and population sentiments or affiliations.

The employment of GEOINT modeling capabilities delivers to the decision-makers the ability to visualize the environment before conducting the operations.

2. GIS in Operations – NATO Core Geographic Services System (CoreGIS¹⁵)

“Fighting off the same map”

Availability of accurate information is essential for the effectiveness of Command, Control, Communication and Coordination in military operations. GIS is a tool for military commanders in a variety of operations in which planning is characterized by a complex process, guided by the experience and capability of the commander and his staff. A GIS-based

¹⁴ ESRI Survey123 application.

¹⁵ *The NATO Core Geographic Services System*, ESRI, 2014, available online at: <https://www.esri.com/~media/Files/Pdfs/library/brochures/pdfs/nato.pdf>, accessed on September 13, 2018.

perspective is capable of “ingesting” inputs as data layers generated from satellite images, topographical maps, aerial photographs, or other ancillary data making the decision-making process more efficient and viable. Once geospatial information gets translated into the digital form inside a GIS, it then becomes easy to manipulate (copy, edit, analyze etc.) and transmit it. Therefore, vital linkages can be easily made between apparently disparate activities based on a conjoint geographic location leading to important changes in the manner of how the resource management decisions are made in different situations.

NATO recognized GIS as being a fundamental technology and realized that it required a modern enterprise-level system able to work and handle the entire geospatial information flow. NATO CoreGIS appeared as a need of a next-generation GIS capable to provide centralized geospatial capabilities. Moreover, this system was meant to be one of the core NATO functional systems.

In its missions, NATO has to be able to access current and trustful geospatial information linkable to other data, such as logistics. An Imperative criterion for NATO partners is to be able to execute joint missions based on a Common Operational Picture (COP).

Based on a modern hardware and software¹⁶ infrastructure, NATO CoreGIS consists of a multiterabyte and centralized storage environment for imagery (high and low-resolution) and other geospatial products, as well as scalable servers capable of supporting a distributed large user community throughout the entire organization.

NATO CoreGIS provides centralized geospatial services to NATO headquarters staff and command and control (C2) systems¹⁷. This means that nowadays, all NATO staff has access to the same strategic and operational geospatial information and products, no matter if they are at Allied Command Operations (ACO) or Resolute Support headquarters in Afghanistan, ensuring that everyone in NATO “fights off the same map”. NATO CoreGIS services are compliant with OGC¹⁸ and International Organization for Standardization (ISO) standards, in order to achieve interoperability among NATO systems and all the member states. This enables other systems to understand and use geospatial data for further analysis, visualization, and planning such as C2 and logistics. It is therefore a system capable to feed all NATO Functional Area Services (FAS) that are dependent of the geospatial support (digital maps), thus offering the capability of managing fluently the logistic and operational information within a COP.

Commanders and their staff, GIS analysts, and other NATO network users’ geospatial content from NATO CoreGIS with other forms of information to use in C2, intelligence, logistics, and many other applications. CoreGIS makes NATO operational planning and execution more efficient and allow NATO to deliver more geospatial capabilities over the system’s life cycle, enhancing the operational picture for situational awareness and rapid response.

3. GIS in Sustainment/ Logistics

Logistics, without any doubts, plays a significant role as weapons in a war. Replenishment of fuel and ammunition, repair and recovery, as well as other supplies, are required to reach the fighting troops in a timely manner. All of these entail for careful planning with reference to choosing the routes and the movement of diverse types of vehicles in order to guarantee the success.

¹⁶ Provided by ESRI™, ArcGIS Desktop and Server complete software solutions.

¹⁷ *Idem*.

¹⁸ Open Geospatial Consortium.

We live in an era, where, fortunately, the information dissemination becomes instantaneous. Remote sensing (RS), corroborated with GIS and artificial intelligence (AI) technologies can be utilized in a convergent and efficient manner in order to develop intelligent systems for war planning. Command, Control, Communication, Computers and Information (C4I) is one of those intelligent systems. Satellite RS geospatial data, for example, can be utilized into generating a broad range of products such as land use, land cover maps, obstacle maps, slope maps, road mobility maps, line of sight plots etc. A system like GIS can furthermore be used to process, create/manipulate and store digital terrain data in order to generate a number of military beneficial products.

Logistics operation main aim is to distribute military supplies at the right place and time to all troops. This aim can be achieved in a high degree by increasing the capability of information collection, processing, analysis and transmission.

GIS is representing a *sine qua non* for the future logistics technology which requires integrating transportation logistics, infrastructure¹⁹ data and near real-time tracking into one secure application. Technology empowers logistics system to have a clear visualization of the assets and perform spatial queries, as well as more advanced analysis, in order to depict the best option available in line with the dynamic contingencies no matter of the location on the Earth. Explosive development with regards to IT hardware, GIS, GPS, Radio Frequency Identification (RFID) and software technologies opened the doors for the precision delivery of combat service support. By integrating location-based services (LBS), GPS, wireless technology, intelligent transportation systems etc., enhancement in efficiency in both supply and distribution can be achieved. Therefore, it is obvious that commanders will benefit from a more precise, near real-time knowledge of the disposition of the assets which will enable them to maneuver combat service support (CSS) assets as seamlessly as they would maneuver combat elements, furthermore increasing their ability of shaping the battle.

Today, defense organizations such as NATO, directly integrate geospatial capabilities into mainstream C4ISR applications. GIS serves as the integrator of transportation logistics, real-time tracking and infrastructure data into enabling the coordination of the movement of a considerable high number of military vehicles, ships, equipment and personnel throughout the entire theatre of operations unveiling a huge role in supporting military strategy and tactics.

Conclusions

An era characterized by the digital, by new information systems and technologies hat escalate as time goes by, has forced the military forces and their operations to embrace the developments so that they do not lose efficiency or become obsolete related to other countries armed forces. One of these innovations is GIS, which is the result of geography evolution from its basic application for naming/delineating the boundaries of countries, rivers and seas, hills and mountains etc. Nowadays, this science applications have transformed it into a more scientific, technological and mathematical one, converting it into a powerful tool for GEOINT analysts, and support of the decision-making process in military fields, especially in the intelligence.

Information is power, making it the most legitimate weapon. Moreover, the real power of information is more and more derived from its sharing, access and speed. The role of information technology (IT) as a warfare force multiplier is depicted from the belief that information advantage leads to information superiority and furthermore boosts combat effectiveness of all platforms. One way to achieve information superiority is by creating shared awareness through networking of sensors, decision-makers, and shooting platforms,

¹⁹ Real-time and relevant information about road conditions, construction and weather.

therefore enabling high-tempo maneuver by speeding of command, as well as close coordination and synchronization during operations. All of these contribute in a synergic mode to increased lethality and enhanced combat capabilities. The primary objective of applying modern IT is to enhance battle-space awareness between operational and command elements.

Consequences of the rapid development of information technologies and their control for army purposes make information one of the key concepts of the unconventional and hybrid warfare. Application of GIS in military operations for getting information is broad used all over the world. There are several instances known in military history wherein an outnumbered army but with a better terrain knowledge has managed to defeat a much bigger, equipped and organized army. Almost all military actions are terrain sensitive and therefore imply a need for careful planning and reconnaissance to ensure success. GIS not only that it can provide information about terrain, relief and features in an area but can also help commanders visualize the terrain more precisely.

GIS is a powerful solution that gives answers to the following questions: when, where, and how often, in a visual form by creating a bridge from raw data to a refined intelligence picture. Having the possibility to visualize within a spatial framework, in an instant, thousands of rows of a raw tabular data, helps the military commanders and their staff, to be flexible and fast. Therefore, GIS occupy center stage when it comes about battlefield simulation, communications planning and mission briefing, command control and logistics management.

NATO missions project forces to remote regions of the world, from the mountains in Afghanistan to the Horn of Africa. NATO personnel working in these environments, often under threatening conditions, need rapid access to accurate and up-to-date geospatial information for planning missions, navigating ships, evaluating terrain, analyzing intelligence, and managing logistics. In short, they require maps, imagery and other geospatial data, along with geographic information system (GIS) technology, to manage, analyze, and visualize data and create web-based GIS services and applications. NATO CoreGIS is nowadays the largest military alliance in the world successful response to all these requirements and has been already in place for more than ten years.

There is a vital permanent need for the military to improve the assessment process, response, and decision-making and GIS is taking it one step further into the inherent and inconspicuous evolution.

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A POSSIBLE EURO-ATLANTIC COMPREHENSIVE MARITIME SECURITY MODEL

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Abstract: *This article aims to identify the existence, relevance and opportunity of a theoretical security through cooperation model based on the main concepts and theories of the security communities and the appreciation of universally recognized individual and collective values and freedom, in order ultimately to prove the relevance and opportunity of such a comprehensive maritime security model that could be adopted and developed at Euro-Atlantic maritime space as part of the complex process of ensuring regional and international maritime security.*

The adoption of a comprehensive maritime security through cooperation model centered on ensuring individual and collective security, stability and prosperity is the key element for the legitimacy, credibility and efficiency of the Euro-Atlantic maritime strategies in relation to international treaties, challenges and threats to international maritime security and last but not least with the peculiarities and characteristics of international maritime basins.

Keywords: *maritime security, cooperative security, security communities, collective security, regional security.*

Introduction

The evolution of the Euro-Atlantic maritime security environment over the past two decades has been marked by a pronounced dynamism that has been sharpened by the diversity of symmetric or asymmetric threats, challenges and responsibilities which the European Union (EU) and the North Atlantic Alliance (NATO) have had to face unilaterally or in common, but in full compliance with the spirit of the United Nations under whose mandates they have permanently acted.

All this transformation of the security environment has led the Euro-Atlantic structures (EU, NATO) towards a more evolutionary trend by initiating or reformulating, adopting and implementing new maritime security strategies centered on improving Euro-Atlantic maritime security and on enhancing the contribution of Euro-Atlantic structures for ensuring the international maritime security in accordance with the United Nations (UN) requests and mandates.

The United Nations Security Council mandate for Alliance and Union initiatives and operations, such as "Active Endeavor", "Atalanta", "Ocean Shield", "Unified Protector" and „Aegean Activity", highlighted the international recognition of credibility and notoriety that NATO and EU equally enjoy in terms of promoting and defending individual and collective values, rights and freedom, stability, security and international peace.

At the same time, UN international recognition and legitimation has prompted NATO and the EU to reassess their ambition and to declare their interests and ability to act globally, as evidenced by the involvement of the Alliance and the Union in maritime security

operations conducted beyond the Euro-Atlantic area of responsibility, such as the fight against piracy in Gulf of Aden.

The expansion of the operation area beyond the Euro-Atlantic maritime space represented, at the one hand, the international recognition of the credibility and viability of the Euro-Atlantic structures to ensure international maritime security. On the other hand, it represented a real and continuous challenge due to the NATO-EU competition for the same maritime capabilities already overburdened by the global extension of the traditional area of responsibility.

In the spirit of the UN Charter, ensuring Euro-Atlantic and international maritime security is a common benefit needed to be seen as a shared responsibility and in this respect the vitalization of Euro-Atlantic maritime capabilities in the spirit of continuous global action must lead to an increased efforts of the main international security organizations (UN, OSCE, EU, NATO) with regard to the support, promotion, initiation and development of regional maritime security initiatives.

Such a regional maritime security cooperative initiative must be strategically grounded and founded on a comprehensive maritime security model that meets regional ambitions, values, interests and characteristics on the way of accountability or procedural and operational harmonization efforts of regional actors and main international security and stability organizations in support of international peace and prosperity, individual and collective rights and freedom as they are recognized and promoted by the UN Charter.

1. The common denominator of Euro-Atlantic maritime strategies

As it cannot be said that the security and stability of the Euro-Atlantic maritime space has been seriously called into question, in the past two decades threats and challenges from the Euro-Atlantic area (piracy, terrorism, migration, weapons trafficking) have increased the operational effort of capabilities maritime of the Union and the Alliance, which has clearly led to the rethinking of the NATO Maritime Strategy and the adoption of the EU Maritime Strategy (EU MSS) for the first time.

Aware of the importance of the maritime space for EU security, under the motto of “*the sea matters*”¹, in 2014 the European Union adopted its first maritime security strategy meant to encourage member states to step up cooperation and mutual support for joint security planning, risk management, conflict prevention and crisis response.

Thus, the EU MSS aims to focus on the internal and external aspects of EU maritime security by identifying and neutralizing potential threats to maritime security in cooperation with states and organizations in the Euro-Atlantic maritime space under an approach centered on the main existing maritime basins in order to ensure that “international law and national law are enforced, freedom of navigation is guaranteed and citizens, infrastructure, transport, the environment and marine resources are protected”².

The EU MSS’s novelty is that the EU declares its intention and willingness to become a global maritime cooperative security contributor, seeking to step up joint efforts ensuring and maintaining maritime security at the Euro-Atlantic main basins and sub-basins (The Baltic Sea, the Black Sea, the Mediterranean Sea, the North Sea, the Atlantic Ocean, Arctic waters), as well as the international maritime regions, such as Horn of Africa or Gulf of Guinea.

¹ *European Union Maritime Security Strategy*, Council of European Union, June 24, 2014, p. 2, available online at: <https://register.consilium.europa.eu/doc/srv?l=EN&f=ST%2011205%202014%20INIT>, accessed on August 01, 2018.

² *Ibidem*, p. 3.

The Allied Maritime Strategy³ (AMS) as revised in 2011, similarly with the EU MSS, carries out a radiography of the condition of the Euro-Atlantic and international maritime environment in terms of its importance for Euro-Atlantic maritime security confronted with increasingly diverse and complex threats and challenges.

Fully following the guideline imposed by the Strategic Concept, the AMS underlines the importance, the determinant role and the opportunity of maritime capabilities in joint or maritime operations to ensure collective defense and security while strengthening the international commitment to cooperative security.

In this regard, AMS is calibrated on the determinant contribution of maritime capabilities to collective discouragement of threats and defense, if needed, crisis management and maritime security through cooperation. A very important aspect facilitating the intensification of the security cooperation process is that the AMS clearly defines the security of collective defense and this reinforces the Alliance's openness and flexibility for a comprehensive approach to maritime security through cooperation with international military and civilian states and institutions.

Through this maritime security strategy, the Alliance aims to increase its credibility, legitimacy and operational efficiency intensifying cooperation with regional or international maritime communities, reiterating that the achievement and maintenance of international maritime security through isolationist strategies under current security threats and challenges it is not possible for any international organization irrespective of its size.

Thus, the initiation, maintenance and development of dialogue, partnerships and cooperation with regional and international states and organizations become vital tools to promote the legitimate interests and security and stability needs of the Alliance.

Synthesizing the above, it can be said that the common denominator of the EU and NATO security Euro-Atlantic maritime strategies is the acknowledgement that the achievement and maintenance of Euro-Atlantic maritime security is closely linked to the international interest and responsibility for maritime security, for which the regional polarization doubled by increased maritime security cooperation among states and international organizations will lead to the relevance and success of EU MSS and AMS.

2. Regional polarization of the Euro-Atlantic maritime space

Diversifying the threats and challenges to Euro-Atlantic maritime security have prompted Euro-Atlantic structures to recalibrate their maritime security strategies to promote and defend their own maritime or common maritime interests globally in cooperation with other states or international organizations.

The need for this streamlining of the Euro-Atlantic maritime strategies could not ignore the particularities, characteristics, limitations, sensitivities or challenges of geopolitical, geostrategic or cultural nature of the main Euro-Atlantic maritime regions, which led to a regional maritime polarization in the sense of conjugating the effort of Euro-Atlantic structures with the one of the main international state or institutional actors in the region.

The relevance and effectiveness of the Euro-Atlantic maritime strategies regional polarization is justified and supported theoretically by Taylor's statement that "communities are necessarily small, and 'universal community' impossible"⁴.

The security of the Euro-Atlantic maritime space is the beneficiary of the implementation of European Union Maritime Strategy⁵ and Allied Maritime Strategy⁶, but

³ *Alliance Maritime Strategy*, NATO, 2011, available online at: https://www.nato.int/cps/en/natohq/official_texts_75615.htm, accessed on August 05, 2018.

⁴ Michael Taylor, *Community, Anarchy, and Liberty*, Cambridge University Press, New York, 1982, pp. 167-168.

their spatial convergence implies the need to see the Euro-Atlantic maritime space as a common area of interest due to the shared values and common interests of the member states (most of them belonging to EU and NATO as well), the competition for the same maritime capabilities, the common threats and challenges and especially to the similar approach of making maritime strategies more effective through comprehensive regional polarization of maritime security.

The favorable framework of EU and NATO strategic polarization combined with the delimitation of security needs from NATO's non-negotiable collective defense needs determines the flexible and cooperative Euro-Atlantic binomial relationship of promoting comprehensive Euro-Atlantic maritime security as desired at the UN-mandated international community.

In essence, the global strategic approach to regional polarization can lead to a two-dimensional perception of the Euro-Atlantic maritime space in the sense of a fully-fledged vital component (see Figure no. 1), meaning the maritime border right beside the Euro-Atlantic soil (Baltic Sea, Black Sea, Mediterranean Sea, North, Arctic and Atlantic Ocean) and an ocean-wide component of interest (complementary to the vital one), extended globally in accordance with the EU and NATO maritime interests and commitments under the international legal framework.



Figure no. 1: The vital Euro-Atlantic maritime space (the author's version)

The implementation of the Euro-Atlantic maritime strategies at the level of the main Euro-Atlantic maritime basins listed above is paramount in the light of the immediate need for security, the benefits of operational legitimacy and credibility, the support and accountability of regional actors and especially, the consideration of the specific sensitivities, peculiarities and limitations of these maritime basins where states or international organizations

⁵ ***, *European Union Maritime Security Strategy, op.cit.*

⁶ ***, *Alliance Maritime Strategy, op. cit.*

independent of the EU or NATO are declaring and promoting their interests and needs as well.

Thus, the key to this regional maritime polarization is to combine efforts to ensure maritime security and stability through cooperation as required by their member state of the UN.

3. A possible Euro-Atlantic comprehensive maritime security model

The initiation and development of maritime security communities at the level of the main Euro-Atlantic regions eliminates the isolationist posture in which international states and organizations can find themselves responsible and engaging them in a joint effort to maintain international peace and security.

Reliability and functionality of the regional security communities is given mainly by applying the same treatment to all Euro-Atlantic maritime regions and in this respect the existence of a cooperative security model resonant with the universal rights and freedom that can be successfully applied in all Euro-Atlantic maritime regions might be the solution of the Euro-Atlantic maritime strategies with regional polarization.

Such a cooperative security model is Cohen's *four ring model*⁷, a model that promotes the individual and collective universal values, rights and freedom, as recognized by the UN Charter⁸, among the regional or international security communities.

The model is known as the four rings model because it is structured on four concentric security rings (see Figure no. 2), namely: individual security, collective security, collective defense and promoting stability.

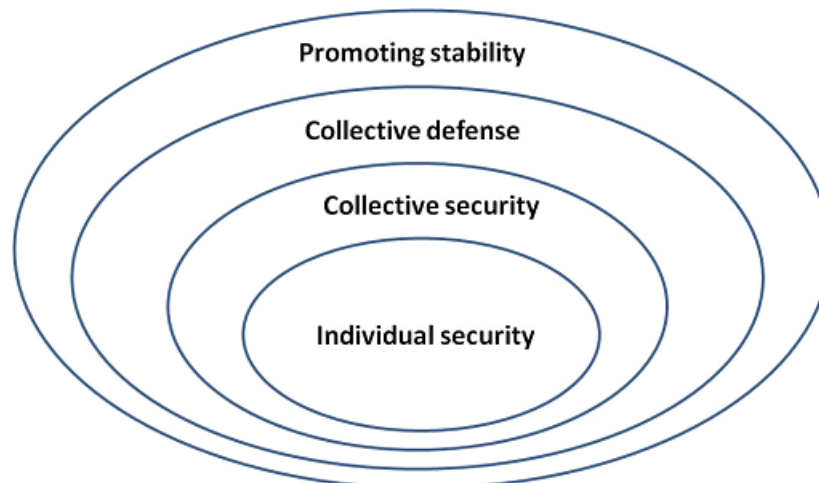


Figure no. 2: “The four rings model” of cooperative security⁹

The ring of individual security is the core of the model and consists of promoting individual rights, values and freedom at the level of security communities as they are universally recognized by the United Nations Charter.

⁷ Richard Cohen, Michael Mihalka, “Cooperative Security: New Horizons for International Order”, *The Marshall Center Papers*, No. 3, 2001, pp. 1-27.

⁸ *Charter of the United Nations*, UN, 1945, available online at: <https://treaties.un.org/doc/publication/ctc/uncharter.pdf>, accessed on August 08, 2018.

⁹ Richard Cohen, Michael Mihalka, *op. cit.*, p. 10.

The foundation of regional security communities on respecting and defending the individual rights ensures the credibility, stability and strength of this cooperative security model.

The collective security ring is the extrapolation of individual security to the community or security initiative to ensure collective security by eliminating the likelihood of any threat or aggression among members.

The dialogue, cooperation, mutual respect and support feed on collective security to support the peace and stability climate and to identify appropriate solutions to prevent and counteract threats to collective security, such as cross-border crime, terrorism, piracy, illegal migration, pollution, and trafficking in human beings, weapons or prohibited substances.

Under the provisions of the UN Charter, the third ring of collective defense offers to the security community grounded on Cohen's model the option of having credible military protection to counter any external threat.

The last ring of the model is the one of promoting stability, which aims to mediate communication and cooperation, to legitimate pacifist or hard interaction between the regional security community and the other states and international organizations. Therefore this ring promotes the stability, credibility and legitimacy of cooperative security in order to diminish the tendency to challenge the model among destabilizing elements.

4. The opportunity of Euro-Atlantic comprehensive maritime security model

The opportunity of the four rings model for the Euro-Atlantic maritime space security is supported, as we have seen above, with the provisions of the Euro-Atlantic maritime security strategies in terms of regional polarization and cooperation as well as anchoring the model to the provisions of the UN Charter on the enforcement of individual and collective rights and freedom, promoting the international peace, stability and prosperity. All those ones are perfectly aligning the model to the values and interests promoted by the Union and the Alliance.

In addition, the relevance of the model for the security of the Euro-Atlantic maritime space is demonstrated by the fact that the comparative analysis of the main international security organizations recommends NATO as the only international institution that fully identifies the cooperative security model (see Figure no. 3).

<i>Institution</i>	<i>Ring One: Individual Security</i>	<i>Ring Two: Collective Security</i>	<i>Ring Three: Collective Defense</i>	<i>Ring Four: Promoting Stability</i>
UNO	YES?	YES?	NO	YES?
OSCE	YES?	YES?	NO	YES?
EU	YES	YES	NO	YES
NATO	YES	YES	YES	YES

Figure no. 3: Institutionalization of security through cooperation¹⁰

The cooperative security model is the mechanism by which Euro-Atlantic security communities can be initiated, sized and calibrated at the level of the main Euro-Atlantic

¹⁰ Richard Cohen, Michael Mihalka, *op. cit.*, p. 15.

maritime regions along with the placement of the states in the region on the four rings of the model.

Taylor¹¹ mentioned that a mediator or initiator of the community-building process has a key role to play during the process of promoting and developing a regional security community through cooperation, a role most likely to be met by international security organizations and institutions with relevance, credibility and legitimacy for international security and stability.

The full placement of the Alliance on Cohen's model recommends NATO as the primary credible mediator and initiator of the Euro-Atlantic security through cooperation communities, engaging as the core of these communities the allied riverine states already complying with the security rings provisions.

Achieving regional maritime polarization starting from the core of the Alliance's member states is part of the Euro-Atlantic maritime strategy, provides evidence of the Alliance's full openness to regional security cooperation, present the benefits of involvement and accountability of the regional and international community, reduce the cost and operational effort of allied maritime capabilities, but supports in particular the comprehensive multidisciplinary and interinstitutional approach to Euro-Atlantic comprehensive maritime security.

The viability of the cooperative security model for Euro-Atlantic maritime security would be highlighted in the following by placing the Euro-Atlantic maritime regions of the Baltic Sea and North, Black Sea, Mediterranean Sea, Atlantic Ocean and Arctic waters on the four rings of the model.

The initiation and development of the Euro-Atlantic maritime security communities having as the core the Allied regional vectors present the coexistence in each Euro-Atlantic maritime region of allied nations and riparian nations that have to be encouraged, integrated and accountable within the joint efforts of ensuring maritime cooperative security, as follows: Georgia, the Russian Federation and Ukraine for the Black Sea Basin, Sweden, Finland and the Russian Federation for the Baltic Sea and North Sea basins, Algeria, Bosnia and Herzegovina, Cyprus, Egypt, Israel, Lebanon, Morocco, Syria and Tunisia for the Mediterranean Sea basin, namely the Russian Federation, Ireland and Morocco for the Atlantic and Arctic waters.

Crediting Cohen's analysis that NATO and its members are fully positioned on his cooperative security model, its viability for the overall Euro-Atlantic maritime basins stands only with the compliance of the non-Euro-Atlantic riparian states with all four rings.

As regards to ensuring individual security, UN membership of all states bordering the Euro-Atlantic Maritime Basins offers the premise of guaranteeing fundamental rights and individual freedom under the UN Charter with few exceptions, especially in the Mediterranean basin due to internal instability, especially among some states like Libya or Syria.

Also, under Chapter VII and VIII of the Charter of the United Nations¹², States bordering the Euro-Atlantic maritime basins are encouraged and entitled to step up their regional, preventive or reactive security dialogue and cooperation in support of ensuring and safeguarding collective security and defense against symmetrical threats or asymmetric.

The exclusive maintenance of collective defense within the bounds of volunteering rather than compulsory (according to Article 51 of the UN Charter) will ensure that the regional security communities are placed on the third ring of Cohen's model in full alignment with the non-negotiable clause of allied collective defense (Article 5 of the NATO Treaty) to which allied regional vectors are fully committed.

¹¹ Michael Taylor, *op. cit.*, p. 37.

¹² *Charter of the United Nations, op. cit.*

The inclusion of the non-Euro-Atlantic riparian states on the first three rings is supported as well by the fact that most of them benefit from partnerships with NATO (Partnership for Peace/PfP, Mediterranean Dialogue/MD) or are members to the Organization for Security and Co-operation in Europe (OSCE).

All these elements come to consolidate the opportunity, credibility and legitimacy of Euro-Atlantic regional security communities and implicitly to actively promote regional and international stability and prosperity.

Conclusions

In order to ensure streamline, credibility and legitimacy to the Euro-Atlantic maritime strategies among the process of adapting to the current international security environment, marked by multiple and diverse threats and challenges to maritime security, it is necessary to initiate and develop regional security communities at Euro-Atlantic maritime basins which may be based on Cohen's cooperative security model.

The spatial delimitation of maritime security communities through cooperation at the main Euro-Atlantic maritime basins is theoretically justified by Taylor such as universality (over-dimensioning) is synonymous with the impossibility of their existence, functionality or development.

NATO's full placement on Cohen's model is eloquent because, in first instance, it indicates that the Alliance is a relevant organization for Euro-Atlantic and international maritime security, capable and well-founded to promote and mediate the development of maritime security communities through cooperation in the Euro-Atlantic maritime space. On the other hand, it validates the functionality and relevance of the model in light of the success and reputation of the Alliance in its maritime security operations or operations.

By validating *the four rings model*, the regional polarization of Euro-Atlantic maritime strategies is emerging and the initiation and development of Euro-Atlantic maritime security related communities around regional allies will complete and formalize the bilateral cooperation between the alliance and regional actors, will guarantee the conditions for considering and capitalizing the geopolitical and geostrategic peculiarities, characteristics, limitations and sensitivities in the Baltic and North Sea, Mediterranean Sea, Black Sea and Atlantic Ocean and Arctic waters.

Adopting Cohen's model as the main instrument for sizing and calibrating regional security communities will support the comprehensive approach to Euro-Atlantic maritime security from the perspective of credibility and legitimacy gained through the promotion of individual and collective democratic rights and freedom and especially by maintaining and defending security, stability and international prosperity.

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CRYPTOCURRENCIES, A NEW REALITY FOR ECONOMY AND SECURITY

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Abstract: *Current paper has the role to present a new reality symbolized by the cryptocurrencies. The analysis will focus on different aspects at national and international level, with impact on economy and on security. The economical view will detail the links with national economies, financial-banking system, stock exchange market, commercial international flows and the utilization of the general ledger technology as factor of innovation in the development of business environment. The security view will analyze the risks with possibility of manifestation in the fields of money laundering, terrorism financing, information and communication technology.*

Keywords: *cryptocurrencies, blockchain, capitalization value, innovation, money laundering, terrorism financing, risks.*

Introduction

The last years of modern society are under the impact of technology expansion and the implementation of the attributes of the knowledge society. One aspect raising the attention due to the influence in different spheres of present life is represented by the cryptocurrencies.

First typology of cryptocurrency, known as Bitcoin, was born in 2008 as a practical expression of blockchain technology, being designed by a person known under the pseudonym of Satoshi Nakamoto. The creator considered producing a network of accounting records that give birth, certify, and record transactions. Results obtained from the actions carried out inside the network are known as cryptocurrencies. The point of differentiation of the new technology is the possibility of any person, owning a computer and an internet connection to become a member. What Nakamoto has implemented can be understood as a technological manifest, presenting a series of similarities to the principles behind the Internet. As an example, decentralization allows each member of the network to solve logical algorithms, generate content recorded and validated by other members. For the activity carried out within the network, people receive crypto units, which they can trade and turn into cash funds.

Quoting one of the numerous online pages the following steps are identified in the functioning of blockchain and generation of the crypto coin output¹: “a user requests for a transaction; a block representing the transaction is generated; the block is broadcasted to all the nodes of the network; all the nodes validate the block and the transaction; the block is added to the chain; the transaction gets verified and executed”.

¹ Hasib Anwar, “The Ultimate Blockchain Technology Guide: A Revolution to Change the World “, July 13, 2018, available online at: <https://101blockchains.com/ultimate-blockchain-technology-guide/>, accessed on October 19, 2018.

Presently the crypto coins do not have a clear, concise and comprehensive definition at the level of public authorities, specialists or the international financial market, having different meanings across different national systems.

For example in the United States of America, diverse public agencies have different understanding of the cryptocurrencies². The Securities and Exchange Commission “has roughly defined cryptocurrencies as being a form of securities, which means that people buy into these cryptos with the intention of generating a return”. The Commodities and Future Trading Commission perceives it “as commodities, putting them on the same level as gold, oil, and coffee”. Inland Revenue Service considers the crypto coins as a taxable form of property. OFAC, part of the Department of Treasury stated, “it will be treating any manner of digital currency such as Bitcoin in the same way as traditional currencies”.

According to the same online page³, Chile and Colombia do not consider the cryptocurrencies as securities or money. For the Civil Code of Argentina cryptos are seen as “a form of goods”. In Europe, some countries do not provide a clear definition, planning to perform this in a later stage, but implementing some general rules, in order to prevent the illegal use of cryptocurrencies. Based on the information available the definition of the cryptos is connected to the economical-social-political context of each country.

The importance of crypto coins has grown over the course of a decade and has become a subject of analysis through the connections of the process with other areas of social life. The expansion of the phenomenon in various directions has attracted the attention of public opinion and authorities. These actors want a better understanding and representation of it, linking the cryptos to the blockchain technology. Many of the current initiatives and projects launched are testing the features of the technology behind, taking into account a medium to long term strategy. Some analysts are even highlighting the future of the distributed ledger, beyond the existence of the virtual coins.

1. Cryptocurrencies Impact in the Economy

Cryptocurrencies are present in the global economy in several dimensions: financial-banking sector, investment markets, international commercial transactions, and innovation.

At financial-banking level, cryptocurrencies generate interest through the benefits of blockchain technology, many financial groups being attracted in testing it. Thus, as a first result, the R3 project⁴ launched with the desire to create a common infrastructure, an initiative involving over 200 companies. Another application of crypto coins at the financial-banking level is the payment system. In this case, cryptocurrency infrastructure functions as a competitor to traditional settlement infrastructures, adding more pressure on a segment already approached by financial technology companies. What attracts some of the banks’ customers in the use of this form of payment is the lack of intermediaries and the swiftness of transactions.

The sphere of the economy, where cryptocurrencies have an overwhelming impact, is the investment market. At present, there are almost 1,600 typologies⁵, the vast number being related to their recognition as investment products. What attracts attention is the capitalization

² “How The World’s Governments View Cryptocurrency from around the World: A Battle of Identities”, September 7, 2018, available online at: <https://bitcoinexchange.com/world-governments-for-cryptocurrency/>, accessed on October 21, 2018.

³ *Idem*.

⁴ “Discover Corda Enterprise”, R3, 2018, available online at: <https://www.r3.com/>, accessed on October 20, 2018.

⁵ Yoav Vilner “Tracking and Trading Cryptocurrencies as They Exponentially Grow”, July 6, 2018, available online at: <https://www.forbes.com/sites/yoavvilner/2018/07/06/tracking-and-trading-cryptocurrencies-as-they-exponentially-grow/#5ec0d618dd55>, accessed on October 20, 2018.

value of this market, arriving to hundreds of millions of dollars. Crypto coin market is characterized by oscillations, the price of traded goods registering considerable fluctuations. Bitcoin, the main representative, had a value at the beginning of 2018 of nearly \$ 20,000/unit, being currently quantified at \$ 6,400/unit⁶.

Price fluctuations on the cryptocurrency market advances some questions for the financial specialists on the nature of the funds invested, the ways of protecting investors and the risks present in the economy. These concerns are present in most of the national jurisdictions. Definition of the nature of cryptocurrency in countrywide legislation raises a certain level of complexity towards public authorities, translated in the monitoring of the market through regulatory or supervisory activities. However, globally are present different approaches towards this market:

- complete ban on the functioning of the market;
- implementation of some forms of control / taxation / regulation;
- opening national economies towards this market in the desire to raise additional funds to the budget.

Among the states showing interest in creating business centers for the virtual money market, hoping to gain competitive advantage, we can mention Japan, Malta and Switzerland⁷.

In order to prevent an investment risk, public authorities in different countries issued a series of communications. The public entities in Romania follow the same line, for example, the Financial Supervisory Authority⁸ issued in 2018 a warning for those who want to invest in such instruments, underlining their volatility and the need for a good financial culture. In addition, “the National Bank of Romania signals an increase in the population’s interest in virtual coins, especially Bitcoin, both in terms of holding and trading, and as a business. Against the backdrop of a lack of regulation and a lack of supervision of global currency schemes, as well as their diversification, financial and reputational risks at the holders' level have increased. At the same time, given the exponential growth in the last period of the price of most virtual coins, and the very high fluctuations recorded by them over very short periods, the National Bank of Romania classifies virtual coins, such as Bitcoin, as speculative assets and risky”⁹.

Cryptocurrencies also have a function in international trade and can be used in the purchase of goods in the states allowing it. According to some of the opinions expressed, they can also have a beneficial role in eliminating currency risk¹⁰. We can complete these indications by using the distributed ledger technology in the registration of goods and documents, removing some of the manual steps present in the flow.

The cryptocurrency industry has also allowed the development of an entrepreneurial dimension, within support and technology testing businesses. We can mention the business model called *Initial Coin Offering*, the process of attracting funds in the creation of a new

⁶ “Cryptocurrency Market Capitalizations”, *Barchart*, October 20, 2018, available online at: <https://www.barchart.com/crypto/market-capitalizations>, accessed on October 20, 2018.

⁷ Viren Vaghela, Andrea Tan, “How Malta Became a Hub of the Cryptocurrency World”, *Bloomberg Business Week*, April 23, 2018, available online at: <https://www.bloomberg.com/news/articles/2018-04-23/how-malta-became-a-hub-of-the-cryptocurrency-world-quicktake>, accessed on October 21, 2018.

⁸ “Avertizarea consumatorilor cu privire la riscurile investițiilor în CFD-uri pe criptomonede”, Autoritatea de Supraveghere Financiară, available online at: <https://asfomania.ro/consumatori/alerte-consumatori/6193-avertiz-consumatori-criptomoned>, accessed on October 21, 2018.

⁹ “Poziția Băncii Naționale a României în legătură cu monedele virtuale”, Banca Națională a României, February 6, 2018, available online at: <http://www.bnr.ro/page.aspx?prid=14338>, accessed on October 21, 2018.

¹⁰ Jennifer Nesbitt, “How Bitcoin could shake up international trade”, *Trade Ready*, August 1, 2018, available online at: <http://www.tradeready.ca/2018/topics/international-trade-finance/how-bitcoin-could-shake-up-international-trade/>, accessed October 19, 2018.

virtual currency. Investors can pay with cash or other crypto coin and receive a percentage of the new unit issued¹¹.

The numerous documents available in the online environment point to the active involvement of ICT companies, financial holdings and universities in creating joint ventures, investing numerous funds in testing the technology behind cryptocurrencies. This approach indicates the existence of a strategy that should allow benefits in several areas of the economy.

2. Cryptocurrencies Impact in the Security Area

Regulators, security specialists and law enforcement agencies have identified security risks that may result from the use of cryptocurrencies.

Among the main risks mentioned are the use of virtual coin schemes for money laundering offenses. The European Central Bank has issued a series of recommendations, indicating, "It would be appropriate for European Union legislative bodies to regulate virtual coins from the point of view of combating money laundering and terrorist financing"¹².

The attractiveness for the use of cryptocurrency in money laundering activities is given by the anonymity, an attribute that can be complemented by the use of IP hide solutions or TOR platform. The "reuters.com"¹³ virtual page provides examples of behavioral patterns adopted to hide the real money origin. Thus, there are listed multiple transactions, the use of intermediaries without a criminal record, the acquisition of goods, the change of digital address, travel to countries with high levels of corruption and terrorism.

Another chapter where security risks can be encountered is terrorism financing and support. This direction is based on the same anonymity attribute, which is considered a strong point by stakeholders interested in financing terrorism. In practice, the security actors have different opinions on the matter. Some of them find unlikely the use of cryptocurrencies to finance terrorism, as the geographical areas where terrorist groups are operating, lack the necessary financial infrastructure¹⁴. The second group of specialists considers quite serious the threat posed by the use of cryptocurrencies to support terrorist activities. Can be included in these scenarios, "the lone wolves" or small cells in Western Europe, people who are radicalizing themselves and have available the necessary financial infrastructure.

Supporters of terrorism can choose different processes to hide real identity, using technological advantages to achieve this goal. In addition to this, they can use the action called *Hawala*, which is specific to areas in Africa, the Orient, or India, and is based on trust, honor, and family ties¹⁵. Experts in security area have identified numerous accounts on social media asking for donations in cryptocurrencies to sustain terrorists' activities.

¹¹ Available online at: <https://www.investopedia.com/terms/i/initial-coin-offering-ico.asp>, accessed October 19, 2018.

¹² Opinion of the European Central Bank of 12 October 2016 on a proposal for a directive of the European Parliament and of the Council amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purpose of money laundering or terrorist financing and amending Directive 2009/101/EC.

¹³ Joshua Fruth, "Crypto-cleansing: strategies to fight digital currency money laundering and sanctions evasion", Reuters, February 13, 2018, available online at: <https://www.reuters.com/article/bc-finreg-aml-cryptocurrency/crypto-cleansing-strategies-to-fight-digital-currency-money-laundering-and-sanctions-evasion-idUSKCN1FX29I>, accessed October 19, 2018.

¹⁴ "Cryptocurrency is not conducive for terrorism, says defense expert to U.S. Congress", *Trade Invest Crypto*, September 2018, available online at: <https://tradeinvestcrypto.com/article/cryptocurrency-is-not-conducive-for-terrorism-says-defense-expert-to-u-s-congress>, accessed on October 20, 2018.

¹⁵ Luc Walter, "Cryptocurrencies: Terrorism's Next Frontier?" Institute for Security and Development Policy, December 15, 2017, available online at: <http://isdpeu/cryptocurrencies-terrorisms-next-frontier/>, accessed on October 21, 2018.

Security sector highlights the crimes committed against the ICT industry, considering the following scenarios: cryptocurrency theft; cryptocurrency ransomware campaigns; fraud identity theft; website control for cryptocurrency mining; computer control for cryptocurrency mining.

The theft of crypto coins or digital wallets has seen a significant increase from one year to another. For the first half of 2018 are estimated losses of 761 million dollars, compared to the year 2017 when 266 million dollars have been stolen¹⁶. According to the “cnbc.com” site, at the beginning of 2018 a Japanese exchange was the victim of a cyber-theft of 530 million dollars¹⁷.

Most cybersecurity companies underline the increase in cybercrime, criminals being attracted by the extra funds gained, compared to traditional criminality. Additional gains are 10% -15% higher and depend on the capabilities of cyber attackers to carry out their scenarios. An experienced hacker can have revenues of 167,000 dollars per month¹⁸. Among the actions preferred by attackers, are the use of operating systems for cryptocurrency mining compared to data encryption campaigns.

Conclusions

The high-level analysis of the current context allows us to assert that we are in the presence of a phenomenon with global exposure and manifestation in several areas of present life. Within a few years, cryptocurrencies have entered in the attention of public opinion, regulatory authorities and decision-makers. Some of the topics discussed at World Economic Forum or meetings of major players on the international scene focus on crypto coins and their impact on the global economy. The evaluation of scenarios is necessary as we witness an increase in the capitalized value of the cryptocurrency market.

The lack of legislation, standards of professional conduct and ethics, monitoring by a regulatory authority in most countries allow the presence of investment risks, fraud, or even systemic risks (estimated minimal) on the crypto market.

We consider a must the implementation of above aspects on the crypto coins market, even if we are in the presence of a situation involving decentralization and lack of intermediaries. Minimal market coordination allows ethical behavior by the participating actors and respect of the national legislation. Even the European Central Bank acknowledges in its recommendation the benefits of using cryptocurrencies in payments’ area, but also highlights a possible regulatory gap: “technological developments in the distributed ledger technology inspire alternative payment means such as virtual currencies, having the potential to increase efficiency, coverage and options for payment and transfer methods. However, the Union's legislative bodies should ensure that they do not appear to promote the use of private digital coins as these alternative means of payment are neither legal nor legal means of payment issued by central banks or other public authorities”¹⁹.

¹⁶ Adi Iacob, “Hackerii au furat criptomonede de 761 de milioane de dolari în 2018”, *Startup Café*, July 4, 2018, available online at: <https://www.startupcafe.ro/afaceri/hackeri-furat-criptomonede-milioane-dolari-2018.htm>, accessed on October 21, 2018.

¹⁷ Kate Rooney, “\$1.1 billion in cryptocurrency has been stolen this year, and it was apparently easy to do”, *CNBC*, June 7, 2018, available online at: <https://www.cnbc.com/2018/06/07/1-point-1b-in-cryptocurrency-was-stolen-this-year-and-it-was-easy-to-do.html>, accessed on October 20, 2018.

¹⁸ “Re-Hashed: 2018 Cybercrime Statistics: A closer look at the “Web of Profit””, *SSL Store*, September 27, 2018, available online at: <https://www.thesslstore.com/blog/2018-cybercrime-statistics/>, accessed on October 20, 2018.

¹⁹ Opinion of the European Central Bank of 12 October 2016 on a proposal for a directive of the European Parliament and of the Council amending Directive (EU) 2015/849 on the prevention of the use of the financial system for the purpose of money laundering or terrorist financing and amending Directive 2009/101/EC.

For each national state, the presence of cryptocurrency has to be linked to the economic, social, political, legislative, and technological maturity. A good representation of the indicated aspects allows a good integration of crypto coins in the national picture and can contribute to the sustainable development of the economy.

Another aspect, which many entrepreneurs, leaders of multinational organizations, decision makers perceive as the real benefit, is the blockchain technology. This is understood as a factor that allows the development of several branches of the economy, establishing a medium to long-term investment strategy. Among the areas with potential in the deployment of distributed ledger technology, we mention: financial-banking services, insurance services (databases with existing customers), online payments, notarial activities and public registers of cadaster, logistics, transport (dispatch of goods) and supply, trade, medical services (health registers), databases for companies, and compliance.

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OPEN-SOURCE STACKS AND SOLUTIONS FOR WORKFLOW MANAGEMENT IN PUBLIC INSTITUTIONS

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Abstract: *Workflow and activity management, also commonly referred to as Business Process Management (BPM), is without a doubt every bit as important as the introduction of a workflow in itself. Standard operations and procedures, inside a public institution, has multiple benefits, ranging from faster operations and increased productivity, to lowering the errors an employee can make. A workflow has to be properly planned and accordingly managed, otherwise employees might find themselves struggling to achieve the levels of effectiveness a manager would have hoped, in the long run. As such, this paper offers an overview of stacks and open-source projects for BPM and Document management, evaluating pros and cons of each solution, with a current focus on modules and ideas that can be implemented for document and resources management, in Romanian national defense institutions.*

Keywords: *bpm, workflow management, public institution, standard procedures, activity management.*

Introduction

We are leaving in the 21st century, and we are already seeing a rapid increase in the amount of published information, or data, and the effects of this abundance are showing¹: from increasingly needing more storage in our digital systems to the global expansion of datacenters, there is a growing need for process automation tools and systems, to manage all generated data. Moreover, this information must be stored, then made easy to access by a human being, in order to benefit from all this newly stored knowledge. As the amount of available data grows, the problem of managing the information becomes more difficult, which can lead to information overload.

Even though the abundance of information can be beneficial in several levels, some problems may be of concern such as privacy, legal and ethical guidelines, filtering and data accuracy².

With so many sources of data, another problem will be accuracy of such. An untrusted source

¹ Digital Technology and Social Change [Open Online Course at the University of California], freely available online at: <https://canvas.instructure.com/courses/949415>, accessed on November 15, 2018.

² Eta S. Berner, Jacqueline Moss, "Informatics challenges for the impending patient information explosion", Journal of the American Medical Informatics Association, 12.6 2005, pp. 614-617.

may be challenged by others, by ordering a new set of data, causing a repetition and duplication of the information. Another concern is the accessibility and cost of such information³. The accessibility rate could be improved by either reducing the costs, increasing the utility of the information or implementing tight procedures to generate and store new data. The reduction of costs, according to cited paper, could be done by companies or institutions, which should assess which information was and is relevant, and gather it in a more organized fashion.

Hence, there is a growing need to standardize workflows, impose procedures to the usage of IT systems, then implement systems to correctly manage and allow access to them (BPM and DMS systems).

With all of the above, this paper offers an overview of stacks and open-source projects for BPM and Document management systems, with a current focus on modules and ideas that can be implemented in a project ran by our group, for document and resources management, in Romanian national defence institutions.

1. Concepts

This chapter will shed some light on the terminology used in this paper, then offer some of the terms and definitions that surround the topic of workflow management, processes and document management. This will enable a better understanding of the subject, as well as provide a solid basis for the following chapters.

1.1. Activities, standard procedures and processes

Depending on the context, there are multiple definitions for processes and procedures. We selected the following statement, from WFMC96⁴: *A set of one or more linked procedures or activities which collectively realize a business objective or policy goal, normally within the context of an organizational structure defining functional roles and relationships.*

As one can see from the definition, the boundaries of these processes in standard commercial business practice are defined by the necessity of contact with external parties and by some clear business aim.

In institutions, it is clearer than ever that standard procedures must be used, to offer the best service possible to it's citizens. The same is available for information systems (IT systems), on a daily basis, when interacting with multiple documents (contracts, receipts, forms) from citizens, inside all the institutions that form the public system. The same is applicable to defence institutions also. These concepts are an important starting point for the workflow topics, in the sections to follow.

1.2. Workflow management systems

The vocabulary of concepts around the term workflow is in some respects very complex. We cannot give all the approaches and all the definitions found in current publications, since the amount of information available would simply be out of the scope of this paper, so we will approach it from an IT perspective.

As such, from Brahm⁵, we can define the following: A Workflow Management System is an underlying (re-)active software system for the control of the flow of work (Workflow) between the locations given in the specification of a data flow (Workflow diagram). For the business enterprise in question which is using the Workflow Management System, Workflow Management Applications will be developed. A Workflow Management System supports with its components both the development (modelling components) of Workflow Management Applications as well as the control and execution

³ Edward J. Huth, "The information explosion", Bulletin of the New York Academy of Medicine, no. 65.6, New York, July-August 1989, p. 647.

⁴ *Workflow Management Coalition (WfMC)*, 1996, p. 9.

⁵ M. Brahm, A. Fletcher, H. Pargmann, *Workflow Management with SAP WebFlow: A Practical Manual*, Springer-Verlag, Berlin, Heidelberg, New York, 2003.

(runtime component) of Workflows.

A more succinct definition comes from Workflow Management Coalition⁶, as follows: “A system that defines, creates and manages the execution of workflows through the use of software running on one or more workflow engines, which is able to interpret the process definition, interact with workflow participants and, where required, invoke the use of IT tools and applications”.

In conclusion, we can define the properties that such a system should contain:

- Actual modelling and definition of an activity type.
- The strength/weakness analysis of the modelling or activity type.
- The creation and simulation of individual instances of procedures.
- The modelling of targets/aims based on the results achieved with the previous steps.
- The control of these examples of individual instances at the end of their process, whereby this control does not have to be computer controlled.
- The logging of data from the new process for revision purposes and as input for a new analysis.

2. Quick overview over the technological environment

This chapter will briefly cover the modules, databases and identity servers the authors looked for, when evaluating current open-source software available in the market.

We currently looked for open-source software mostly, for various reasons. In fact, open source is probably responsible for the majority of software ever installed on every computer in the world; if it's not installed directly, it's probably the foundation of some commercial piece of software just about everyone uses, or used at some point in their lives. One of the most compelling parts it's the fact that with open-source software all code is open and freely available for modification. This can offer multiple benefits to a public institution, such as faster code review, openness ethics, and multiple contribution from various developers and could potentially avoid vendor lock-ins.

Moreover, a small developer team can much faster adapt and modify the code to its needs, a fact very often found in public institutions, with limited IT resources.

This can also result in multiple cost savings and faster handover to different developer teams, if code-review and documentation is properly managed from the start of the implementation.

As a drawback, one must also be aware that most of the time he or his team must be able to fix all issues, as there is no extensive tech support from a company. User communities exists for about every major component out there, and can be very responsive, but at critical times one can't really count on the community for critical infrastructure fixing. It is so mandatory to hire an expert and dedicated team, in order to maintain and improve the software, if needed. This can increase cost, so a thoroughly cost versus benefits study must be accompanied every time a new IT project or implementation based on open-source software must be made.

2.1. WSO2 identity server

WSO2⁷ is an open source technology provider, focused on implementing SOA based services (service-oriented architecture). It offers an enterprise platform for integrating APIs, applications, and web services locally and across the Internet.

Their identity server is a much highly regarded Identity Server⁸. Identity management, also known as identity and access management (IAM) is, in computer security, the security and business discipline that “*enables the right individuals to access the right resources at the right times and for the right reasons*”. It addresses the need to ensure appropriate access to resources across increasingly

⁶ Official website of Workflow Management Coalition, available online at: <http://www.wfmc.org/>, accessed on November 15, 2018.

⁷ WSO2 Company profile, available online at: <https://wso2.com/>, accessed in September 2018.

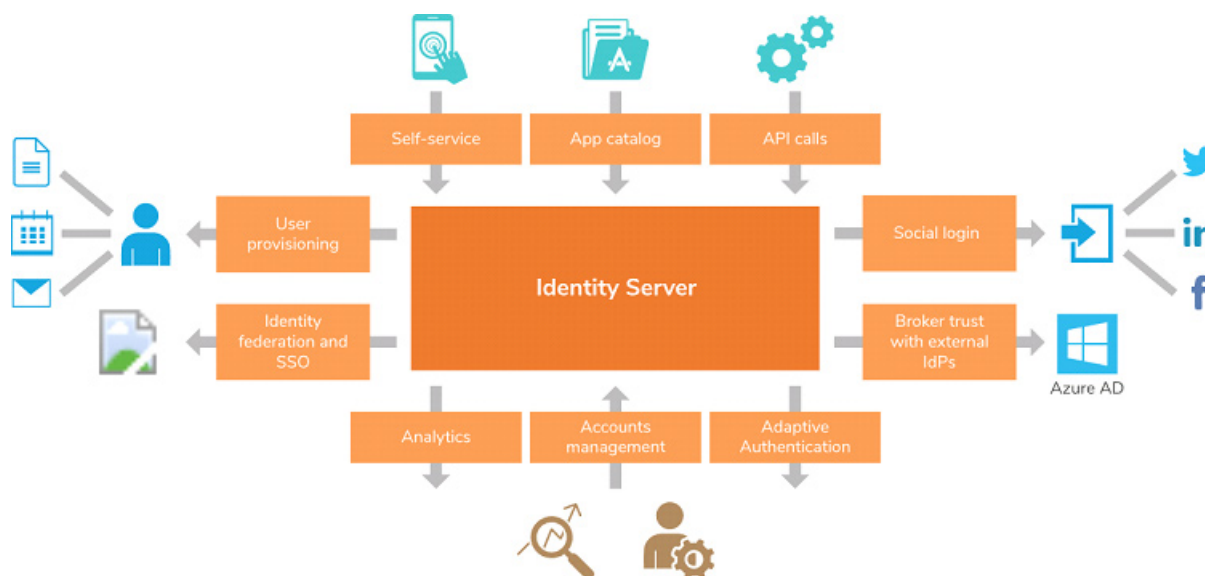
⁸ Identity Management, available online at: https://en.wikipedia.org/wiki/Identity_management, accessed in November 2018.

heterogeneous technology environments and to meet increasingly rigorous compliance requirements. This is mandatory in a BPM – DMS application.

In Figure no. 1, we present the functionality required by an IS, offered by WSO2.

Figure no. 1: Identity server feature list

As such, WSO2 Identity Server, part of the WSO2 Integration Agile Platform, is an open



source IAM product optimized for identity federation and SSO (Single Sign On), with comprehensive support for adaptive and strong authentication. It helps identity administrators to federate identities, secure access to web/mobile applications and endpoints, and bridge versatile identity protocols across on-prem and cloud environments.

In the following section we present another open access protocol, highly popular in other identity management application implementations.

2.2. LDAP (Lightweight Directory Access Protocol)

The Lightweight Directory Access Protocol (LDAP) is an open, vendor-neutral, industry standard application protocol for accessing and maintaining distributed directory information services over an Internet Protocol (IP) network⁹.

Directory services facilitate access to information organized under a variety of frameworks and applications. IBM Tivoli, Novell, Sun, Oracle, Microsoft, and many other vendors feature LDAP-based implementations. The technology's increasing popularity is due both to its flexibility and its compatibility with existing applications¹⁰.

As examples, directory services may provide any organized set of records, often with a hierarchical structure, such as a corporate email directory. Similarly, a telephone directory is a list of subscribers with an address and a phone number.

⁹ *Lightweight Directory Access Protocol*, available online at: https://en.wikipedia.org/wiki/Lightweight_Directory_Access_Protocol, accessed in September 2018.

¹⁰ V. Koutsonikola, A. Vakali, *LDAP: framework, practices, and trends*, in IEEE Internet Computing, 2004.

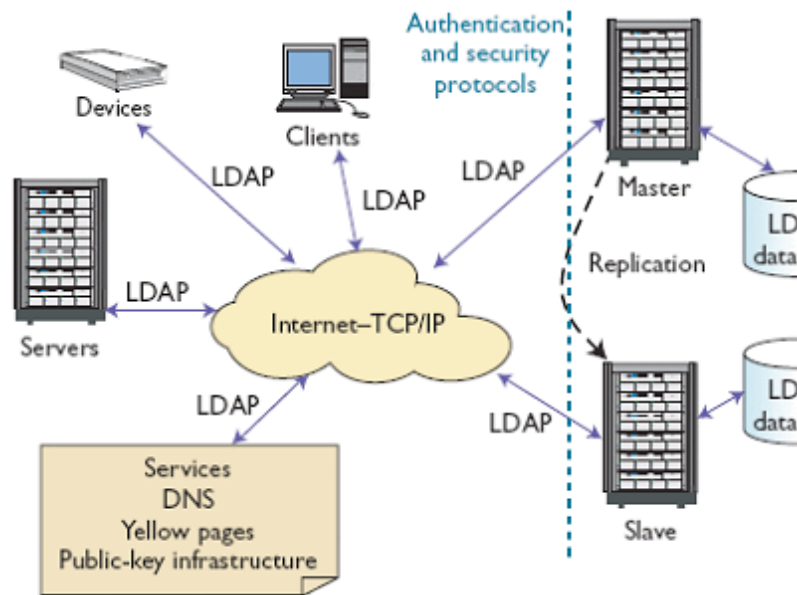


Figure no. 2: The LDAP framework. Users and devices use the LDAP protocol to access data and credentials stored in the server

LDAP operations are based on the client-server model. Each LDAP client uses the LDAP protocol, which runs over TCP/IP, to retrieve data stored in a directory server's database. LDAP clients are either directly controlled by an LDAP-installed server or managed by an LDAP-collaborating application. Figure no. 2 offers an overview of the LDAP framework, in which many devices (such as printers and routers) and servers (such as mail servers) can access data stored in a given LDAP server database. LDAP clients accessing LDAP servers should be authorized through authentication mechanisms, which can implement various security protocols. As Figure no. 2 shows, replication, in which a primary LDAP server (master) sends updates to a read-only replica server (slave), is common among collaborating LDAP servers, in order to increase reliability.

2.3. Nginx HTTP server

Nowadays, most newly written software starts directly as a web-application, with a client server architecture. One of the benefits of this design is that they can be accessed by any client or operating system that is capable of running a browser, which offers great flexibility in terms of client operating systems.

Because web-applications are accessed via HTTP ports, a web server is required to host and serve the application, via a browser. One popular choice for a web server is Nginx¹¹, which can also be used as a reverse proxy, load balancer, mail proxy and HTTP cache. Nginx is free and open-source software, released under the terms of a BSD-like license.

A large fraction of the web most popular sites uses Nginx, often as a load balancer. It is a choice of many webmasters, startup founders, and site reliability engineers because of its simple yet scalable and expandable architecture, easy configuration, and light memory footprint. Nginx offers a lot of useful features, such as on-the-fly compression and caching out of the box, coupled with stable memory usage and a high concurrent connection rate. This makes it a very popular choice among developers.

¹¹ V. Kholodkov *Nginx Essentials*, Packt Publishing, 2015.

2.4. Apache HTTP server

Another popular HTTP webserver option is Apache¹², being one of the oldest and most modular of its kind. It is a free and open-source cross-platform web server software, released under the terms of Apache License 2.0. Apache is developed and maintained by an open community of developers under the auspices of the Apache Software Foundation. The vast majority of Apache HTTP Server instances run on a Linux distribution, but current versions also run on Windows and OS/2, and a wide variety of Unix-like systems.

Notable features include the ability to support multiple programming languages, server-side scripting, an authentication mechanism and database support. Apache Web Server can be enhanced by manipulating the code base or adding multiple extensions/add-ons.

It is also widely used by web hosting companies for the purpose of providing shared/virtual hosting, as by default, Apache Web Server supports and distinguishes between different hosts that reside on the same machine.

With great legacy support and a lot of documentation, Apache server is a great choice for every project in which stability and predictability is required.

2.5. Varnish Cache

BPM and DMS applications inside institutions usually have to server a large user-base. As we established a web-base application is preferable, we have to find a way to speed up access to the frontend during busy office hours.

For the above scenario, http-proxy and cache servers are the solution. One popular option is Varnish¹³. Varnish is a reverse HTTP proxy (see Figure no. 3), sometimes referred to as an HTTP accelerator or a web accelerator.

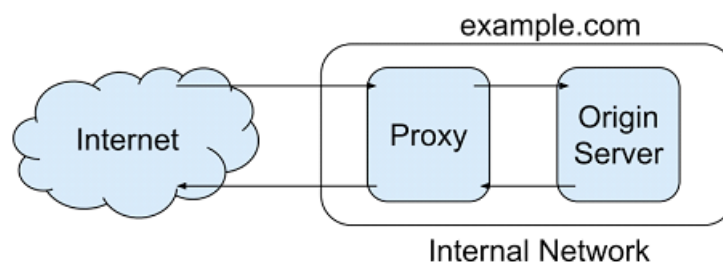


Figure no. 3: A web serving architecture, containing a proxy module

A reverse proxy is a proxy server that appears to clients as an ordinary server. Varnish stores (caches) files or fragments of files in memory that are used to reduce the response time and network bandwidth consumption on future, equivalent requests. Varnish is designed for modern hardware, modern operating systems and modern workloads.

Varnish is more than a reverse HTTP proxy that caches content to speed up your server. Depending on the installation, Varnish can also be used as web application firewall, DDoS attack defender, load balancer, etc. Using Varnish can increase the application delivery rates by a factor ranging from 300 – 1000x, depending on the deployed architecture.

2.6. Nagios Core monitoring server

Monitoring an infrastructure is vital nowadays, especially when running a highly used, core business logic software, such as a DMS application server. We briefly describe, in this section, the Nagios Core¹⁴ server, that can be used to monitor hardware infrastructure together with software, with

¹² *Apache HTTP Server*, available online at: https://en.wikipedia.org/wiki/Apache_HTTP_Server, accessed in November 2018.

¹³ V. Francisco, L. Kristian, F. H. Tollef, R. Jérôme, *The Varnish Book*, Varnish Software AS, 2016.

¹⁴ *Nagios Core Documentation*, Nagios Core Development Team and Community Contributors, 2009.

an OS-level agent capability. It watches hosts and services that you specify, alerting you when things go bad and when they get better.

Figure no. 4 is an example of how Nagios can monitor a highly complex architecture, consisting of devices, software applications and databases.

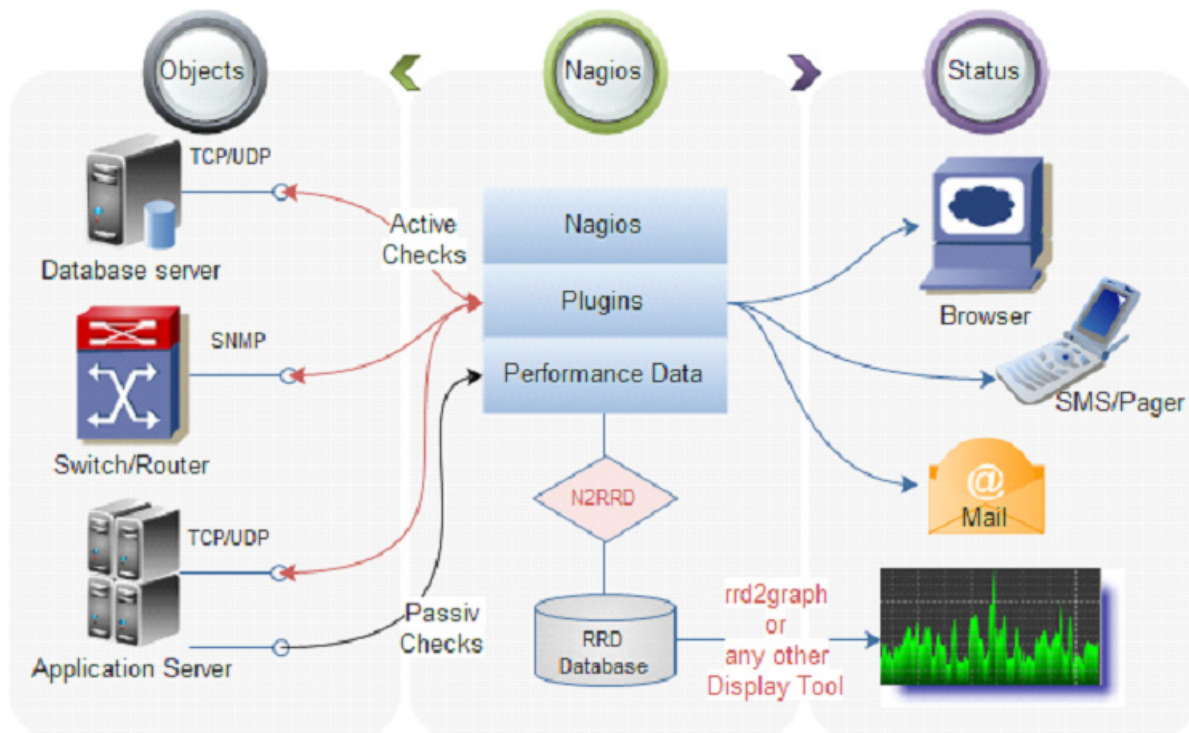


Figure no. 4: Example of an architecture monitored by Nagios Core

2.7. NoSQL databases

As DMS applications work with a lot of binary documents, like spreadsheets or pdf files, this can create a lot of potential problems if stored in a classical SQL-based environment. Not to mention the size and resources used to create a backup and restore of the database, in case of a major crash. BLOB field in SQL databases create a lot of overhead, so lately, a new type of database storage came to prominence, for non-homogenous data applications.

NoSQL¹⁵ encompasses a wide variety of different database technologies that were developed in response to the demands presented above, in building modern applications:

- Developers are working with applications that create massive volumes of new, rapidly changing data types: structured, semi-structured, unstructured and polymorphic data.
- Long gone is the twelve-to-eighteen-month waterfall development cycle. Now small teams work in agile sprints, iterating quickly and pushing code every week or two, some even multiple times every day.
- Applications that once served a finite audience are now delivered as services that must be always-on, accessible from many different devices and scaled globally to millions of users.
- Organizations are now turning to scale-out architectures using open source software, commodity servers and cloud computing instead of large monolithic servers and storage infrastructure.

Relational databases were not designed to cope with the scale and agility challenges that face

¹⁵ MongoDB NoSQL official website, available online at: <https://www.mongodb.com/nosql-explained>, accessed in November 2018.

modern applications, nor were they built to take advantage of the commodity storage and processing power available today. Hence, NoSQL is perfect for a highly transactional DMS system.

3. Analysis of current open-source solutions available on the market

After studying numerous open-source applications (Bonita BMP, Odoos Apps, Red Hat Process Automation Manager), we concluded that the following DMS and BMP application fits our need. For space considerations, we will make a quick summary of the features that interest us for the given task.

1.1. *Alfresco DMS-BPM (Document Management System – Business Process Management)*

Alfresco¹⁶ is a collection of information management software, developed using Java technology, and provides an open source community edition using a LGPLv3 license. It has some restrictions in terms of scalability and availability, like there is no built-in clustering support. But support can be obtained in the commercial edition, if an institution requires it.

While Alfresco initially focused on document management only, it slowly matured into a “Digital Business Platform”, by expanding into web content management-based applications. Alfresco’s core Digital Business Platform offering consists of three primary products. It is designed for clients who require modularity and scalable performance. It can be deployed on-premises on servers or in the cloud using an Amazon Web Services (AWS) Quick Start. A multi-tenant SaaS offering is also available.

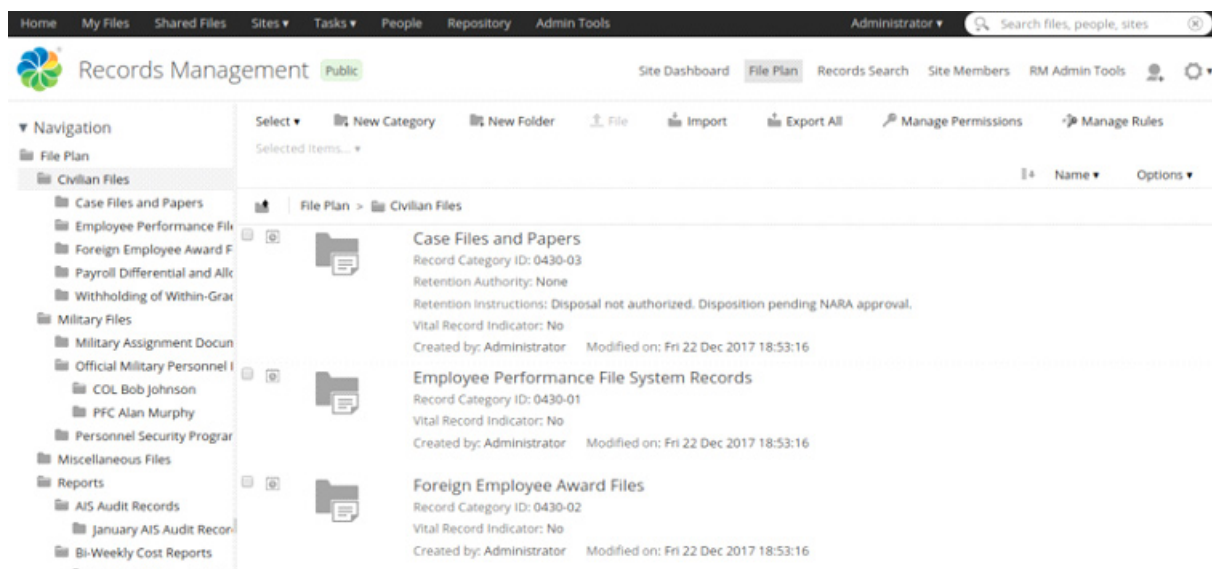


Figure no. 5: Example of the DMS module web-based interface, for document management

Moreover, a separate open source product called Activiti is offered for modeling BPM processes. This is the community edition of Alfresco Process Services. Activiti is a light-weight workflow and Business Process Management (BPM) Platform targeted at business people, developers and system admins. Its core is a super-fast and rock-solid BPMN 2 process engine for Java. It’s open-source and distributed under the Apache license. Activiti runs in any Java application, on a server, on a cluster or in the cloud. It integrates perfectly with Spring and is extremely lightweight and based on simple concepts.

¹⁶ Alfresco Wikipedia page, available online at: [https://en.wikipedia.org/wiki/Alfresco_\(software\)](https://en.wikipedia.org/wiki/Alfresco_(software)), accessed in November 2018.

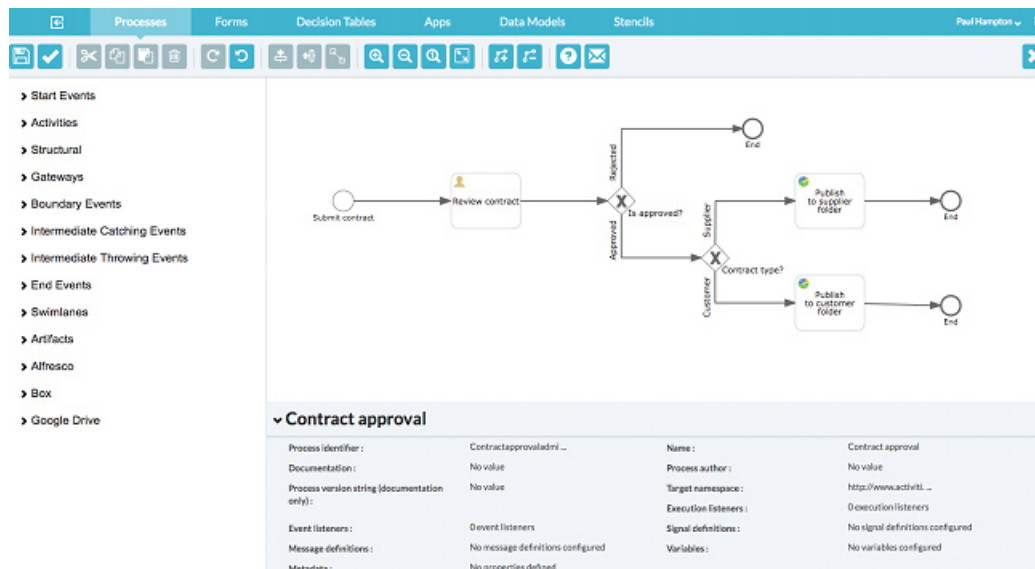


Figure no. 6: Alfresco Activity BPM interface

Conclusions

This paper offered an overview of stacks and open-source projects that can form the basis of an applications stack, in order to build a BPM and Document management system, in Romanian national defense institutions. Most popular tools were overviewed, after carefully studying the open-source application landscape.

Open-source was the main objective, as we see it as a future for collaborative software-development, where one institution can avoid vendor-lock-ins, which can be potentially very costly, in the long term. Pros and cons of this path were explained, and an institution has to carefully plan the implementation of BPM processes and DMS systems.

For sure, it's mandatory for all institutions, in the 21st century, to have some sort of standard procedures and software in the form of a DMS system, in order to efficiently manage all the information overload, that comes from the multitude sources of digital documents, that are generated, on a daily basis.

Acknowledgement

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BLOCKCHAIN MALWARE IMPACT ON ORGANIZATIONAL SECURITY

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Abstract: Ever since the launch of Bitcoin blockchain system, the world has witnessed a new type of asset: the data asset. The power of value distribution and lack of transaction tracking comes with the price of enhancing data theft capabilities of black hat hackers. This work will attempt to expose the type of attacks that use virtual currency, as well as the impact it produces in an organization. We consider two well-known types of malware involving cryptocurrencies: mining-based and ransomware. The attacker damage is in the resource consumption, whether that is money extortion, electrical power or device wearing.

Keywords: Malware, blockchain, cryptojacking, monero, bitcoin, attack, crypto coin, energy consumption.

Introduction

Cryptocurrencies have brought a great amount of capability in all areas where value needs to be exchanged. One of the main reasons of their appeal is the standardization of trust. Until their introduction, the two or more entities that wished to perform a transaction had to trust a third-party entity that all the transaction participants also trusted. Its parts involved mostly had to trust into an institution or company.

When selling a property, one must trust in a notary that will charge a percentage of the transaction. In the democratic voting act, the voters must trust in some sort of Central Bureau of Elections. When paying with a credit card, one must trust into a third-party company like Visa or Mastercard. These are large obvious examples, but the list is much more extensive. Blockchain resolves these issues in a decentralized manner, standardizing exchanges on an international scale basis.

a) Short description of blockchain

Blockchain is generally a mechanism that stores transactions in a chain of blocks. The key characteristics of blockchain are¹:

- Decentralization – not needing a third party to act as transaction guaranty;
- Persistency – recordings are there forever;
- Anonymity – user identity is protected while doing a transaction;
- Auditability – ability to account every transaction ever made on the blockchain.

The main technologies integrated into blockchain are cryptographic hashes and asymmetric cryptography. There are many technologies introduced in various *crypto coins* algorithms like *Proof of Work (POW)* and *Proof of Stake (POS)* to achieve consensus on the network. Critiques are cast over each consensus method, as *POW* tends to utilize large processing power and *POS* tends to be prone to “the rich are getting richer” paradigm. The present malware problem refers only at *POW* method, used by mining blockchain systems, as there is no connection between the miner and the right over using a certain machine’s hardware in the process (figure no. 1).

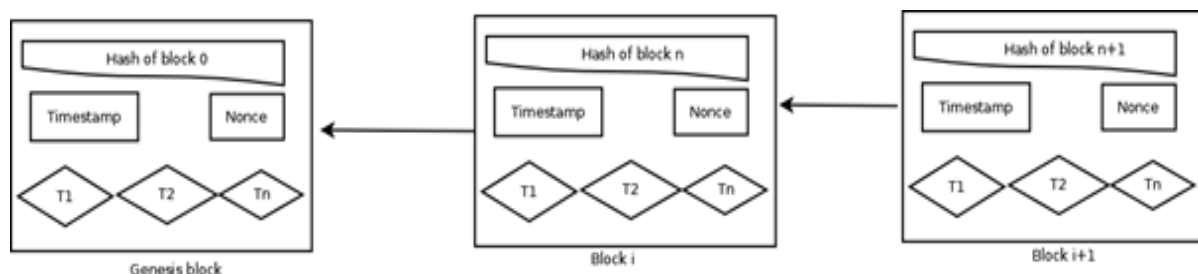


Figure no. 1: Architecture of blockchain based systems

In general, the blockchain is a distributed data structure. Each block has a header that contains the version of the block and it is linked to its parent with its hash (for Bitcoin it’s a 256-bit value – SHA). It contains the hash of all the transactions present in the block (called Merkle tree root hash), a timestamp, a bit field naming the current hashing target, a nonce – a challenge for miners to solve. The Proof of Work states that nodes must calculate a different nonce until a target is reached. Afterwards all nodes participant to the network must mutually confirm if the value is right². The nodes that perform the calculations are called miners and the *POW* process is called *mining*. Since the verification requires hardware and time resources, the *miners* are granted a reward, usually in *crypto coins*.

The previous procedure, in chapter 3, a small script will be described.

b) Current state of crypto malware

There is an overwhelming surge in incident reporting in the last year, especially in crypto-mining attacks. The wide adoption of *Social Media* like *Facebook* messenger, *YouTube* ads and thousands of other websites play an important role in spreading malware. There is a common tendency for computer users to consider themselves safe from crypto attacks if they don’t own crypto assets. This is a misconception as crypto-miners are equal opportunity attackers and some of their most notable victims are the *European Water Utilities*, UK government websites, a Russian nuclear plant or even exploiting an *NSA* vulnerability. As declared by *Checkpoint* from their 80000 gateways and millions of endpoints, the crypto mining attacks have been on a constant rise from fall of 2017, especially after December 2017, when Bitcoin surpassed the 10000\$ market price. Looking at the *Bitcoin* ledger, at the price of 10000\$, a new block is committed to the blockchain every 10

¹ Z. Zheng, et al., “Blockchain challenges and opportunities: a survey”, *Int. J. Web and Grid Services*, 14(4), 2018, p. 24.

² *Idem*.

minutes, giving 12.5 *BTC* to the miner showing the correct problem resolution. The sum tops 6.8 billion dollars in a year. *Monero* rewards miners with 430\$ annually. This gives hackers a lot of incentive for clandestine mining.

Mining attacks are simple to put into action and give huge financial benefits to the hacker. There are cases when a reported attack generated more than 3 million dollars from mining *Monero*.

There is also a grey legal aspect, as a big part of running a JavaScript crypto-mining script on the user's browser is not considered a crime, although there is a lack of morality in disconsidering user's consent.

1. Other types of crypto-currency attacks

Other attack methods include wallet theft – hackers attempt to obtain the secret key from a wallet, so they can sign transactions from its address to quickly deplete the wallet.

Malware installed on the computer that silently senses a wallet address can change the string pasted on the transaction form with the attacker's address. This way, the unsuspecting user sends the money to another address, given it doesn't verify the form carefully (Figure no. 2).

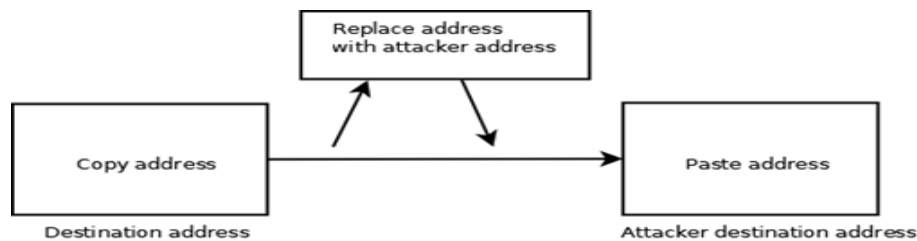


Figure no. 2: *Shuffle attack depiction*

Breakings in exchange sites is another problem, as most of them have insufficient security and are unregulated.

1.1. Ransomware – problem description

In a similar pattern as seen in the beginnings of Internet³, the blockchain openness, distribution and anonymity features create an opportunity for malevolent hackers to take advantage. *Cryptojacking* means the unauthorized use of someone else's computer in order to mine blockchain based currency. The code is running either by tricking the victim to run a script from a sent link, or by running the code that loads in the victims browser.

In 2017, the blockchain ransomware was prevalent and as of 2018, the crypto jacking malware is taking the lead. Cyber criminals try to play the longer game, opposed to a one-time payment. Apart from the case where the speed of the machines is highly diminished or hardware failure, there is little concern from usual users about the CPU running a bit slower or the computer fans running a bit louder.

Monero is the top preference for hackers regarding browser mining. The reason is the design of the coin is focused on the capability to be mined by any hardware, as opposed to specialized miners (or ASICs). The intrinsic feature of anonymity makes almost impossible to track where the money is transferred.

An interesting example is⁴ that provides a script for users enrolled for the service and collects about 30 percent of the income that is acquired.

³ M. E. Kabay, *Introduction to computer crime*, Norwich University, Northfield VT, 1996.

⁴ Coinhive, available online at: <https://coinhive.com>, accessed in September 2018.

McAfee Labs reports in June 2018 a 629 percent increase in coin-miner malware, compared to final quarter of 2017.

A new tendency is monetizing the *Ransomware as a Service*, so that common people will enroll in order to make money with such a malware service.

Hackers developed an even more clever technique to deceit the user. The usual browser *cryptojacking* ends when the user is closing the browser window. Some sites that run mining scripts create a new browser window that hides itself under the taskbar, making it very hard for the user to see and therefore running even after the user closes the browser from the “X” mark. The way to prevent this is by checking the task manager for opened browser windows, something not commonly done in a usual work flow.

New worms have also been developed, where the approach is finding the servers that contain web pages, running an exploit and installing the crypto mining software as the payload. It works like regular worms, but silently hogging CPU resources. It is easy to imagine how infecting machines can help the attacker have an army of crypto generating machines that produce wealth.

Classic ransomware infects user computers, usually encrypting a useful information in exchange of some sort of value. Modern ransomware uses cryptocurrency as payment option, working very well with the anonymity options provided by most of the widely adopted coin like Bitcoin and Ethereum.

As of 2016, SVGs (Scalable Graphics Format) are used for embedding JavaScript code and used as a cyberattack⁵ and the code is run through the browser.

An infected ransomware user has the following options: pay the ransom, restore from backup, lose the files, brute force the key.

For brute force, the key is usually long enough so that breaking it will require billion years on a powerful desktop machine. Some solutions for ransomware are implemented and distributed from antivirus companies or other entities.

In order to deal with ransomware or mitigate its effects, the usual proposed advices are⁶:

1. Keep a safe backup of your important files;
2. Do not enter unknown spam links;
 - a. Use advertising blocking programs;
 - b. Turn JavaScript off in browsers, only using it when required.
3. Patch all OS's and browsers and keep computer programs up to date, including plugins la Java and Flash, so that is less likely to be susceptible to a vulnerability that can be exploited by malware
4. In case of infection detection – minimize the loss by turning off the machines, also the network and try to assess the situation in an offline manner. In a heavily infected environment, data (mostly disc drives) should be contained and recovered on clean machines.

As a general pattern, the following figure explains the steps that need to be taken when dealing with ransomware (Figure no. 3).

⁵ A.K. Maurya, Neeraj Kumar, A. Agrawal, R.A. Khan, “Ransomware: Evolution, Target and Safety Measures”, *International Journal of Computer Sciences and Engineering*, 2018, pp. 80-85.

⁶ *Idem*.

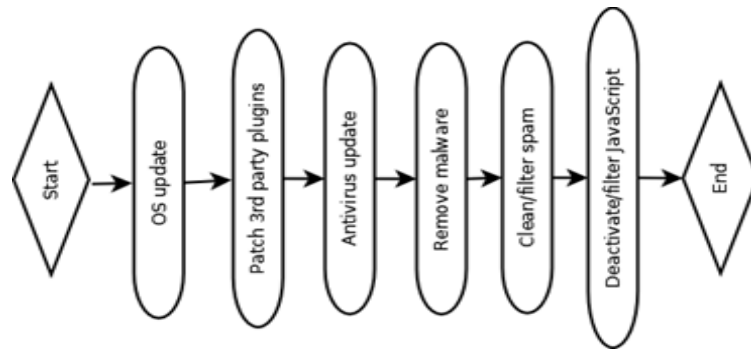


Figure no. 3: Diagram of ransomware good practices

1.2. Business impact

The crypto coins are not yet well adopted, and companies do not accept crypto payments widely, there is not a major concern about direct payments. However, not being able to still direct value does not prevent hackers from posing real business risks.

Some business risks associated with mining malware are:

- Mining malware is a serious threat that can consume the CPU resources of servers. It can increase the cost of electricity and lower the service availability. If the organization relies on an expanding cloud, additional resources will be used, increasing cloud hosting costs. If the cloud architecture is not elastic, the attack could lead to a DOS (Denial of Service).

- On mobile phones, there are applications that include mining code. The mining code can produce heating to such a degree that causes the devices to deform.

- It has a great impact on the organization reputation. Clients can complain about the slow services speed

There is need for the design of better cloud models, as cryptojacking can scale up the cloud architecture real fast, artificially growing the business cost.

3. Cryptojacking example and mitigation

The script under is an example script from *CoinHive*, with the purpose of showing how the library is loaded. The script loads an object *miner*, instantiated with the address of the user that will be credited for the mining.

```
<script src="https://coin-hive.com/lib/coinhive.min.js"></script>
<script>
var miner = new
CoinHive.Anonymous('B4ShXfNHJy3nEDclHBuc5i2bKJ3Sok8P');
miner.start();</script>
```

Code 1 How a crytojacking service is embedded

Similar services with different names are: Crypto-loot, CoinImp, MinR, etc.

An interesting example for study is *deepMiner*⁷, which is a self-hosted. This means that the code doesn't need to be hosted by a third-party operator and can be used directly on the website (MURSCH, 2018). Self-hosting the script may pose problems to identification, but it can be accomplished through finding the function that calls the main object to run. The configuration is done from a JSON file on the server named *config.json*. Here, the operator

⁷ evil7, deepMiner, GitHub, available online at: <https://github.com/deepwn/deepMiner>, accessed in October 2018.

enters the credentials of the mining pool and the wallet address. In order to find the sites that run or are affected by the malware, one can use *PublicWWW* for finding the source code “*deepMiner.Anonymous*”.

On the user side, one of the easiest methods to stop a large part of browser *cryptojacking* is to install a *minerBlock* plugin.

Conclusions

This article presented a series of blockchain malware applications real example situations. Crypto-mining can a detrimental role on the security of an organization. As shown above, there are many ways a hacker can gain material advantages, leveraging on user deception. Miners pose problems that should be addressed and taken into serious consideration by any company, as it poses these major risks:

- Drives organizational cost up;
- Wears-off devices;
- Makes services unusable or highly diminishes their capacity.

Examples of implementations show how *cryptojacking* is utilized and presents methods to limit or eliminate the damage.

Acknowledgement

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THE IMPORTANCE OF IT MANAGEMENT IN INSTITUTIONAL PROJECTS

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Abstract: *The complexity of identification and implementation of actions geared towards the attainment of quality objectives, cost and time has created the need for an uniform administration. At this point, the request for qualifications as Project Manager is growing due to its applicability in various fields of economic environment. The particularly complex character of projects imposed since from the very beginning the use of IT programs and applications. In the field of project management, those applications were developed continuously and they constitute important elements in the information systems of many businesses. In recent years, also on the Romanian market, such computer programs started to appear, provided by some large corporations in the field of information technology, and even by some national industry software producers.*

Keywords: *project management software, project, program, Microsoft Office Project Professional, Spider, Primavera Project Planner for Enterprise, Charisma Enterprise.*

Introduction

A project is a living, complex organism, consisting of a set of interdependent elements in continuous interaction, evolving towards a final goal established in accordance with the organization's statutory objectives and its development strategy, but also with the context in which the needs and problems of the community evolve. The life-cycle of a project involves primarily resources (human, material, financial and documentary) underlying the development of activities aimed at achieving the objectives.

The project is completed with the evaluable results on the impact of activities on the target audience (a project it always does for one or more categories of beneficiaries direct and/or indirect) and other partner's participants in the project, and also in the light of the efficiency with which the four categories of the abovementioned resources have been managed.

The main features of the project are:

- It is characterized by the context in which it takes place;
- Can be divided into several subsystems, which exhibit the same characteristics;
- It is open to the other systems with which it has permanent shifts;
- Has its own rules and mechanisms to adapt to the outside world.

A project cannot be reduced to a succession of planned responsibilities and actions linked to goal logic; it is an element of change, a creative and formative process. Public institutions, although bureaucratic structures, are confronted with an increased requirement to carry out projects. These projects are the support of innovation, change, dynamics of activity -

all for the benefit of the public they represent and whose interests they promote. Whatever the purpose of the project, we need to consider some common precautions and rules that allow us to avoid difficulties such as budget losses, interpersonal conflicts and undesirable differences.

Project management is an important function of each institution or organization. To write a project and to give it life, to launch it and to evaluate it, to provide it with prospects for continuation and development is an activity of utmost importance, the coordination of which belongs to the manager of the organization.

For a project to have maximum chances, it must be built on the following principles:

- Innovation;
- Partnership;
- Responsibility;
- Community participation;
- Efficiency;
- Professionalism;
- Transparency.

Computational projects in the field of project management have evolved continuously, reaching today as important elements in the IT systems of many companies. In the last years and on the Romanian market such computing programs began to appear, at first, some products by the big information technology corporations, and then some software produced by the Romanian industry itself. The most prominent computing programs for project management are Microsoft Project, Microsoft Corporation, Super Project Expert, Computer Associates International, Primavera Project Planner, Primavera Systems Inc., Time Line Project, produced by Symantec Systems Inc. and Harvard Total Project, produced by Software Publishing Corporation. Although for the most part they are similar, I will summarize the most representative of them.

Projects can be complex and depend on many different factors, departments and outcomes. So the software helps determine the dependencies between events and what happens if things change or go in a less smooth direction. In addition, they can plan people to work with different tasks and the necessary tasks to accomplish goals (physical, financial or whatever). People also use these software applications to deal with uncertainties in estimating the duration of each task, organizing tasks to meet different deadlines, as well as juggling simultaneously with several different projects as part of a general goal.

1. Criteria for choosing a software

The basic criteria for choosing a software are:

- Flexibility: Can the system adapt to the way the organization does business?
- Easy to use: Will employees be able to use the system without an excess of training?
- Category: What category of MP software suits and if that category fits the needs of the organization?
- Receptivity: How receptive is the organization?
- Price: Does the system's price match the value you will recover?
- Functions: Does the system have a number of features to meet current and future goals?

1.1. Flexibility

Organizations are different and unique in their own way. MPs should be flexible and adaptable to the needs of their organizations and processes. The organization should not change its preferences to adapt to the software. How does flexibility look like? The most important thing to do is to be able to create and modify fields and forms. If you are stuck with

fields embedded in the tool it is very difficult to adapt to the environment of your work organization. You should be able to track almost everything you need in the tool to eliminate the introduction of rudimentary data and archives.

Another plus of flexibility is the ability to create and edit reports. Reports are an important part of every MP software. After all, a great reason to incorporate this tool is the ability to get key information at the right time to act and make decisions. The ability to create and modify reports (including custom fields) is crucial to doing so. Other additional aspects of flexibility could include: flexible security, views and tracking of different types of data, other than projects and activities (such as costs, problems, risks, or other types of data).

1.2. Easy to use

This term is used to describe a desirable aspect in software, but what does it mean to be easy to use? Perhaps a simple definition would be that users can use the software to track business processes without laborious training. Find out how many training sessions are needed for users to start using the system efficiently. This will be different depending on the users: those who enter and manage projects versus those who update their status or time versus those who use managerial reports for the interface. Most systems allow you to try the program. Learn how easy it is to navigate and perform some basic functions. You will not be able to follow your processes accurately in a generic/test environment, but you should be able to feel how to handle and perform common / common tasks (such as creating a project and making reports.)

1.3. Category

What kind of MP software belongs to the product? Take a look at the different categories of software (you can find them above) and evaluate systems that fit into the categories that fit the needs of your organization. For example, if your organization has some hundreds of users, you will not want to choose a stand-alone solution.

1.4. Price

Perhaps not the only criterion in choosing a software is not the price but plays an important role in choosing it for the organization. There are two main cost drivers in the MP software market: Cloud-based software installed locally. The software as a service (hosted) refers to the scenario in which the provider owns the software for you as a service. You connect to the program via the internet. Pricing is typically per user per month as long as the provider provides services to the organization. The locally installed model refers when the software is installed on the company's server. This is not provided by any vendor. Costing is usually the traditional purchase of a software where you pay once for a permanent license to use the software, along with annual maintenance to cover ongoing support and updates. There are advantages and disadvantages in both models. Short-term costs will be higher if you opt for pre-installed software, but long-term costs will be lower. Short-term costs will be lower with software as a service, but long-term costs will be higher. The software as a service means you do not have to worry about any technical issues (the provider does this), while the installed model means you have complete control over the data. Find out what each supplier offers and choose the best for the organization.

1.5. Responsiveness

How receptive is the provider? How does the provider provide support to the customer? Are they really keen to help the organization accomplish strategic goals? Support is provided by talking to someone or just by email? Do they have personal support in the country and abroad? How often is the software upgraded? These are some of the questions

that should be asked by a potential vendor to understand how it responds to the organization's needs. An easy way to learn more about the receptiveness of the vendor is to ask questions and be careful during the evaluation process.

1.6. Functions

Functions/Features are an important part of the evaluation process. Even so, sometimes, it is difficult to identify the best functions that are needed for the organization. That is why we have added a list of the most used features at the end of this "ARTICLE" alongside the 6 Essential Criteria, which you can use as a reference. To sum up, make sure that the system has the main features of the project management you need, and then determine what other features are available from which you can obtain current or future benefits. After discovering which features support the system, understand how they will be used to fulfill your business processes. Among the features/benefits of project management software can be: precision, permissiveness, easy to use, allow changes, speed, calculates budgets and controls costs, allows definition of work schedules, email communication, graphs, stores, import/export data, sort and filter data, work with multiple projects and subprojects, generate reports, resource management, plan, monitor and control projects, security, "What-if" analyzes.

There are several disadvantages regarding the use of project management software such as deconcentrating caused by software, overloading with information, over-confidence in software and false security. However, there are a large number of project management software packages that are effective tools for planning, controlling, and adjusting projects. Generally, they allow the management of project groups, projects and subprojects at different levels of complexity. The use of software is essential for large-scale projects, as it allows the management of all operations according to established parameters, while offering various possibilities for viewing information.

2. Project management software applications

The most relevant applications for project management are:

- Microsoft Office Project;
- Spider Project Professional;
- Primavera Project Planner for Enterprise;
- Charisma Enterprise.

2.1 Microsoft Office Project

It is used in project planning, planning and tracking, providing a wide range of graphical possibilities for information representation. Advantages of using Microsoft Project:

- provides cost and resource planning (people and equipment).
- besides planning the activities, a control project can be carried out to compare the initial and the updated planning and to produce comparative status reports between the actual situation and the initial planning.
 - several project planning variants can be defined to choose the optimum option
 - project deployment can be represented with this software in several ways (Graphics, Tabular, Detailed Structures)
 - throughout its use, Microsoft Project monitors all actions by providing suggestions and alternatives in planning and tracking projects.

2.2 Spider Project Professional

Used for project management in various areas such as Banks, Construction, Consulting, Software Development, Telecommunications. It is tailored to the specifics of the activity / project for which it is purchased. Advantages of using Spider Project:

- has wider functionality and better solutions for the same activities than other similar programs;
- provides the opportunity to create simulation models for the management and operational processes of a project;
- it is not necessary to adjust the processes according to the software capabilities;
- simulates real processes and offers project managers optimal solutions for different issues;
- can operate on cost centers (revenue and expense centers);
- can also be used for financial reporting in addition to status reporting.

2.3 Primavera Project Planner for Enterprise

It is one of the most powerful project management systems being a multi-user, multi-program and multi-project system designed to work on Oracle and MS SQL databases.

Allows planning and control of all the projects a company runs in terms of both time and resource/cost. Primavera Project Planner for Enterprise - is made up of a suite of programs that give complete satisfaction to project management from any company:

- Primavera Project Planner for Enterprise is designed for project managers; it includes general project management, planning, reporting, resource control and risk management;
- Primavera Portfolio Analyst is a project management analysis tool, providing top management with critical project information;
- Primavera Progress Reporter is a web-based system that allows the collection of data on human resources participation in the activities and the automatic updating of activities, acting as a timetable and order of work;
- Primavision is a web interface for senior management and project managers, allowing them to participate in decision-making with minimal effort.

2.4 Charisma Enterprise

It is an integrated company information management system for organizations in all sectors of activity. Starting from the specific needs of each company, the Charisma system allows the collection and interpretation of information in order to obtain the optimal decisions needed to make the activity more efficient. The main advantages offered by Charisma Enterprise are:

- Integration - the solution integrates the entire activity of a company into a single system with a single database;
- Scalability - it can start from a minimum configuration, and additional modules can be added later. Additionally, the software package does not need to be transformed in case of major changes to the size and complexity of the company;
- Modularity - the package structure is modular, each aspect of a company's business being treated in a specific and appropriate manner;
- Security - the system provides an advanced level of security, user rights or restrictions reaching the level of the database fields;
- Flexibility - the system is based on the activity of companies in all fields of activity, due to its specific, flexible and quickly configurable extensions (retail, leasing, contracts, installments, loans, insurance, production, service, fleet management, human resources and wages, etc.);

- Reporting - the system ensures projection of all activity in the set of document types - reporting required by legislation, specific reports, documents provided by internal procedures - eliminating inconsistencies and redundancies;
- Align to organizational goals - real-time control, optimize activity and increase efficiency, decision support;
- Process orientation, document feeds and events.

Conclusions

It is obvious that a management system can no longer use the traditional means of recording and information. The beginning of the 21st century has made available to all mankind modern means and instruments of: registration; processing; transmission and decision. Improving a system, whatever it may be, cannot be conceived beyond the use of modern methods and technologies.

Information solutions as well as the results obtained are intended to contribute to the general efforts that are needed to achieve the actual computerization of certain operational forms in project management.

Acknowledgement

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INFORMATION SYSTEMS REQUIREMENTS FOR EFFICIENT WORKFLOW MANAGEMENT IN PUBLIC INSTITUTIONS

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Abstract: *The rapid development and implementation of ICT applications, as one of the main characteristic of the informational society, continues to determine changes on multiple levels. Numerous observations indicate that the vast majority of human existence elements are more and more infused with a cyber component, form day-to-day, routine activities, up to critical processes which can impact the national security and defense. Determined by the specific way used for the collection, processing, storage and dissemination of information, the systems and applications based on information and communication technology can determine the optimization of workflow management processes and activities within public and private organizations and enterprises.*

Keywords: *workflow management, information system, operational requirements, information security.*

Introduction

Currently, the majority of public institutions use hybrid and heterogeneous information systems and solutions for the management of data, activities and associated workflows. Consequently, the lack of a comprehensive approach as well as the lack of an interoperable architecture can have a negative impact over the economic and functional performance of national institutions and subsequently over the state instruments of power. Therefore, in order fix this issue, a new information and workflow management system should be designed, operationally tested and implemented. This integrated system would provide various automated facilities and services to support an efficient management of institutional processes, activities, resources, projects and programs. Also, the system would provide automated tools for a smart and secure management of organization's internal information flows, data, information and documents, in an interoperable framework enabling the cooperative work between distinct entities.

This paper summarizes some of the findings obtained during the research and theoretical analysis of the framework in which the public institutions operate currently, aimed to identify the operational requirements for a new, feasible and interoperable workflow management information system.

Information systems for workflow management - operational requirements identification

Due to the characteristics of the current, highly information intensified operational environment, the security and defense institutions require a robust and secure information architecture. This architecture would ensure the rapid development of information associated activities such as collection, processing, sharing, storing and dissemination of data, as well as

a swift resource management process aimed to streamline the specific activities of these organizations.

Generally, the qualitative transformation of data into useful informational products or actionable intelligence is executed through a dynamic process, synthetically represented in the pyramidal model depicted in Figure no. 1.

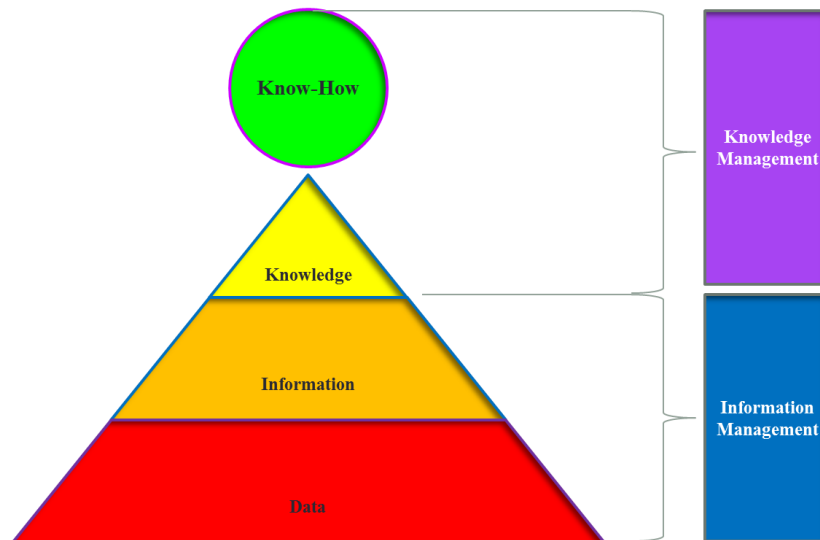


Figure no. 1: Information hierarchy

The analysis of the information hierarchy model indicates that in order to create valuable information products the organization has to transform the data into information and ultimately into knowledge. Subsequently, accumulated knowledge has to be transformed into a specific organizational expertise or wisdom, which will be the basis for making informed decisions by leaders, through a better understanding of the causal link between decision and action.

The cycle leading to the creation of information products, generally known as the intelligence cycle, carries out the above-mentioned transformation through an iterative process which comprises several stages (see Figure no. 2), such as:



Figure no. 2 – The intelligence cycle

- Planning and directing the information process;
- Data collection;
- Data processing;
- Information analysis and creation of information products;
- Dissemination of information products;
- Use of information products.

Broadly, in a competitive environment, the effectiveness and efficiency of specific activities conducted by the organizations with security and defense responsibilities is decisively influenced by these organizations capacity to collect, process and disseminate information products to decision-makers or leaders at a very high pace. Thus, accelerating the cycle of collection, production, dissemination and use of actionable intelligence determines the acceleration of the associated decision-making cycle, as well as the successful planning and execution of specific activities or operations with respect to a potential competitor or opponent whose similar cycle has been surpassed.

As far as the degree of complexity of organizational structures increases, it is necessary to implement capabilities and processes designed to collect data from multiple sources, aggregate data into actionable intelligence and disseminate information products to decision-makers. The value of information is context sensitive and depends in particular on the timeliness of its delivery, on how it is capitalized in the decision-making process and subsequently used in the management of the organization activities or operations.

In the current operational environment, characterized by unprecedented information intensification, we believe that the acceleration of decision-making cycles, planning and control of public institution activities can be potentiated by an integrated workflow management system based on ICT solution.

From a functional point of view, this integrated management system must ensure:

- Automated management of processes and activities of public institutions - through the rapid development of the work activities, the smooth running and real-time monitoring of specific tasks and by facilitating the update and optimization of the existing procedures;
- Automated management of programs and projects the public institution is conducting, by automating the development, management and monitoring of programs and projects;
- Automated resource management, including financial planning, budget execution, accounting, reporting, administration of assets and inventories, logistic and human resource management activities.
- Automated management of the internal information circuit, documents in electronic format management, transfer of documents between institutions, ensuring the security of data and documents, and providing unitary information and reporting framework, streamlining the possibility to establish a common agenda between specific entities.

The integrated IT system must be able to acquire / receive data from multiple sources and in various formats, to ensure the processing, storage, sharing and circulation of information and information products, while ensuring their physical and logical security. To ensure interoperability requirements, the workflow management system might be integrated with the command and control system of the supported entity. Based on this approach the two systems will be able to exchange data, information and services in order to streamline the access to the organizational resources used at a given time to accomplish operational objectives and tasks (see Figure no. 3).

The design and implementation of the integrated management system should increase the capacity to ensure the requirements of service-oriented information exchange at the level of supported structures. Thus, the specific information requirements will be provided by the following categories of services:

- Command and control services, to provide decision makers with an overview of activities, operations and areas of responsibility;
- Communications services, to provide connectivity with other systems and services, enabling the access to the subordinate, superior or peer-structures data bases;
- Intranet services, to provide connectivity and IT services for local and extended computer networks.

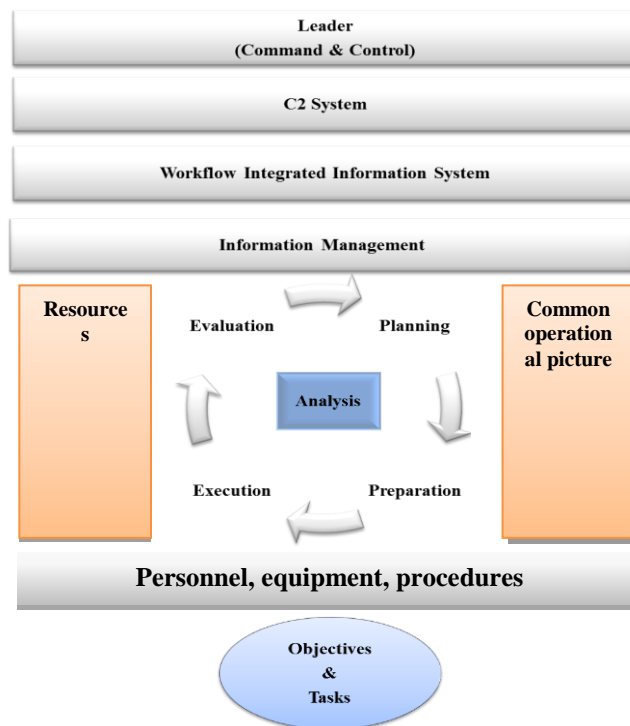


Figure no. 3 – Place and role of workflow management information system

The workflow management integrated system must provide the necessary communications and IT services and facilities and make them available to different categories of users. Therefore, the following information specific requirements need to be taken into consideration in organizing, implementing and using the integrated management information system:

- Collection, transmission, processing and dissemination of data and information concerning the situation in the operational environment;
- Deployment of information links for command-control, logistics and cooperation between entities participating in joint action;
- Setting of the necessary circuits and information flows, specifying the sources, the recipients, the volume of communications, their route, the transmission environment and the drafting format;
- Provision of information interoperability requirements through the implementation of computerized models, operating systems, databases and compatible application packages;
- Provision of topographic information and digital maps regarding the area of operations to be used in the C2 process;
- Provisions of authorized access to the various databases;
- Electronic distribution of classified documents, in a collaborative work environment;
- Ensuring access to and use of the Internet for documenting and informing each other, sending and receiving unclassified documents;

- Provision of access to the local Intranet resources, for documentation and mutual information;

- Protection of circulating and resident information, ensuring that unauthorized organizations and people are prevented from accessing the internal system information flows;

The protection of information is determined by the diversity and specificity of the domains, problems and peculiarities of the information environment specific to the public institutions. It is influenced by the actual improvement and diversification of the means, techniques and technologies used for collection, processing, storage, and transmission of data, information and information products, as well as the threats rising from unauthorized and malevolent access. Therefore, the integrated system for the management of workflows should be designed in such a way as to ensure that cybersecurity requirements are met, in accordance with good practices in the field. The identified technical solution should achieve the authorized access for system users, the confidentiality, integrity and availability of resident and mobile data and information, non-repudiation of access and protection against cyberattacks.

The system must ensure strict enforcement of IT security measures. COMPUSEC measures are implemented in order to provide the framework for protection against electronic access to computer networks and computer subsystems, to data and information circulated or stored thereon. Those measures include the use of hardware, firmware and software security devices designed to control, allow or forbid the users access to the system resources, while generating log-in reports and technical reports on how the system is used. The COMPUSEC measures are targeted on three types of computer security, namely cryptographic security, physical data security, software and hardware security of computer networks. Computer network security is the set of security services and mechanisms that produce an adequate level of information security. It focuses on software protection, while integrating other types of technical, administrative and physical measures for information protection. Granting access should be based on an analysis of each user's information needs, consistent with his position, role and priority level access.

The analysis must be performed by the functional departments together with the ICT department and must be documented in a formal policy document that will include: the entity structure served by the IT application; relations and requirements for communication between the constituent elements of the supported structure; the functions / roles within the structure that have access to the system and its resources; the level of access of each function / role from the point of view of the classification of the information it is entitled to access; the workstations from which each user can access the system.

During the system configuration the software procedures through which the system will manage and register the user access will be implemented as well as the periodic log checks generated automatically in order to monitor unauthorized access attempts, whether intentional or not. Software measures for access protection can be duplicated by hardware measures by installing firewalls and implementing multilevel identification techniques and procedures.

Conclusions

The operational environment of the national institutions is characterized by the accelerated processes and activities developed in an information intensified context. In order to ensure an efficient and secure management of information flows and their associated workflows, the potential of the information and communication technology must be harnessed. As the current used solutions are not very effective the research indicates that a new workflow management information system must be created. This system should be a

robust, secure and interoperable system, integrating various open source applications, customized to fulfill the identified operational requirements. These requirements focus mainly on implementing several automated components associated with the management of organization's processes and activities. Thus, the system would provide the public institutions with a powerful tool able to ensure the rapid creation, management, monitoring and reporting of projects and programs, automated resource allocation and tracking as well as an efficient management of internal information flows.

The functionality of the proposed system is based on standardized information operational procedures, implemented through a unique model of digital data representation, regardless of the type of data acquired and processed: text, graphs, maps, audio, video, etc. The intensive dissemination of information in digital format, predominantly visual (text and graphics) or multimedia (audio-video) ensure greater assimilation in a shorter timeframe and enables an information control which is effective and efficient. The organization and system design should be compliant with the general international standards, as well as with specific NATO and EU standards and good ICT practices. The specific protocols for communication, interfacing and information transfer, as well as the level of logical structures of information would be strictly defined and assessed in order to ensure the required level of connectivity and interoperability with partner or allied organizations. The system should be flexible, versatile and transparent from the standpoint of users' access and information location, storage, replication and update of distributed databases, control procedures applicable to all memory platform and data transfer on those platforms, providing an inverse connection aimed continuously towards the comparison and evaluation of institution activities progress.

The facilities of the integrated system should provide the capacity to create rapidly a wide collection of management documents (plans, orders, reports, documentation etc.), text processing, multimedia information, interactive graphics and interfaces for collaborative work in the Intranet as well as across the Internet. Taking into account the importance of geographical information within the economy of state institutions the integrated information system should contain a GIS and a GPS module as well, which provides digital maps services and enables the precise spatial identification of the organizational and technical elements pertaining to the supported decisional and actional structures.

The effectiveness, redundancy and resiliency of the integrated system should be ensured by design, enabling the continuity of the core services and facilities, from static positions or in deployed mode, and even with partial capacity available or in the case of cyberattacks.

Acknowledgements

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INFORMATION SECURITY MANAGEMENT IN PUBLIC ENTITIES WITHIN THE ENERGY SECTOR

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Abstract: *This paper shows how the ISO 2700 family procedures are applied within an institution providing public services in the energy sector.*

SR EN ISO / IEC 27001 establishes the requirements for the assessment and treatment of information security risks and the organization adapts the requirements of its own needs. In this context, we present an analysis of the indicators characterizing an information security management system. The needs analysis within the institution leads us to conclude that there are four (4) indicators (or assessment criteria) for the energy sector in question in line with the objectives of the Information Security Policy. For these indicators, we have developed the calculation formulas required for the risk analysis we are making.

Keywords: *evaluation criteria, risk, inventory of resources, indicators.*

Introduction

A less known fact, but important and interesting at the same time, is that man consumes more energy than he has been endowed with nature. In addition to this differentiates us so much that it can be considered the specific difference of the species. Hence many conclusions, but for us it is relevant to observe that the present civilization is the product of man's ability to convert different forms of energy. The forms of energy that humanity primarily uses are thermal energy and electricity.

It can be said without exaggerating in any respect that the foundation of human civilization is the two forms of energy: thermal energy and more recently in history, electricity. Assuming this finding, corroborating it with the EU's efforts to build a sustainable welfare society, we see that energy security is an essential component of this effort.

In our paper, we have agreed to show what the practical implementation of an information security standard, i.e. ISO 27000, is in the key services area as defined by the NIS Directive, from inventory resource perspective, risk identification, goal formulation and strategic indicators. We have concluded that four (4) are the indicators (or assessment criteria) in line with the objectives of the Information Security Policy. We built the calculation formulas of the indicators. In the following, we agree to identify your essential energy service provider under the generic name of "Institution, Public Energy Service Operator" or "ISPDE".

Implementation of ISO 27000. A standard is a rigid framework so that it can be a benchmark for the implementer and flexible enough to be adopted by as many organizations as possible. Rigidity is in fact the ability to reproduce based on an iteration (such as PDCA) a recognizable, confident environment in which uncertainty is defined and controlled. Fluency is the capacity to adapt the standard to an organization's internal dynamics and to the external dynamics represented by the organization's working environment, the regulatory framework.

ISO is an organization whose history begins in 1946 and continues to this day. The ISO standard in terms of standardization comes not only from the quality of the developed projects but also from the fact that it has managed to be credited by 162 countries whose representatives cooperate in 786 committees and subcommittees on the development of standards.

ISO 27000 is a standard for information security management. This means that the information is an economic asset or a resource to be treated in relation to the value attributed or valued. The value of a good is directly proportional to the risks it is exposed to and, in the matter of information, the risks are associated with confidentiality, availability and integrity.

1. Preliminary analysis on the implementation of ISO27000 in the energy sector

An institution, a public service operator in the energy field, for various reasons, including legislative requirements, geo-political security environment, the desire to protect their interests more effectively, and so on started an implementation project for an information security management system, namely the implementation of the SR EN ISO/IEC 27001 standard.

First, for a common language with other organizations or entities, the terms or terminologies used are established. Because the project is "SR EN ISO/IEC 27001 implementation", their terms and definitions are those specified in SR EN ISO/IEC 27000. Therefore, if there is doubt about the content of any term, any interested party may consult for compliance SR EN ISO/IEC 27000. For the issue of risks reference will be made to SR EN ISO/IEC 31000, and for continuity of activity according to SR EN ISO/IEC 22301.

Secondly, SR EN ISO/IEC 27001 establishes requirements for the assessment and treatment of information security risks and the organization adapts the requirements of its own needs. Although the organization is free to adapt the requirements, it is not free to exclude¹ any of it if it wants to audit and obtain the certificate of compliance with the standard.

Thirdly, both external and internal contexts define and constrain the freedom of action in achieving the proposed objectives. In other words, stakeholders, the regulatory/compliance framework and all other risk factors that shape the information security management system, interfaces and dependencies between their own activities and the activities of other organizations are identified. Public entities in energy sector identified among the relevant stakeholders the following: regulators (ANRE, ASF, BVB), shareholders and investors, customers and consumers, their own staff and trade union organizations, public authorities, local authorities, research institutes and university education institutions; pre-university students, competitors, partners, providers, non-governmental organizations. As elements of the compliance framework have been identified: national legislation, and in particular the energy sector and applicable to listed companies (BVB and LSE), ANRE regulations, ASF, BVB and LSE regulations, critical infrastructure specific legislation, service specific legislation essential health and safety legislation, environmental legislation.

¹ ISO 27001/ISO 22301 Knowledge base, 27001 Academy, available online at: <https://advisera.com/27001-academy/knowledgebase/list-of-mandatory-documents-required-by-iso-27001-2013-revision/>, accessed in November 2018.

Although it may seem tempting, developing an information security policy is not the first thing to do. The first thing without which any subsequent action is incomplete and even irrelevant is the inventory of resources: both human resources and the technical and organizational resources to be included in the information security management system (ISMS). This inventory is projected over the organization's map of processes, and in this way, we get an image of the information flows that show us on the one hand who the process owners, information and data are and on the other hand gives us the possibility to identify threats, vulnerabilities and risks associated.

The world we live in is in an accelerated dynamics, and our ability to follow events is limited as different experiments show. The more the observation of the consequences of the events is applied. Hence, we conclude that there are consequences that we are not aware of and which increase the degree of uncertainty about the future. In addition, the complexity of the world is a good argument to claim that events do not always produce certain consequences. Regarding information security, the observation is almost obvious. This means we have to deal with uncertainty as a source of threats, vulnerabilities and risks.

Identifying the threats, vulnerabilities and associated risks enables them to be assessed and selected for their treatment according to *acceptance criteria* and *the evaluation criteria* assumed by top management in accordance with the interests and requirements of the relevant stakeholders.

Evaluation criteria are a key element in the implementation of the standard, and that is why we will insist on them. Criteria for evaluation are those criteria, which, under the conditions of repeatability, deliver “consistent, valid and comparable results”². In other words, the evaluation criteria are the metrics that determine whether the objectives of the information security policy have been reached or to what extent they have been reached and what corrective actions are needed to achieve them. According to SR EN ISO/IEC 27001: 2018, “Top management must establish an information security policy that:

- a) It is appropriate to the purpose of the organization;
- b) Includes security and information objectives (...) or provides a framework for setting security objectives for information;
- c) Includes a commitment to meet the applicable information security requirements;
- d) Includes a commitment to continuously improve the information security management system”³.

The importance of criteria for assessing threats, vulnerabilities and risks in the field of information security can also be seen from the fact that ISO is developed through a standard dedicated to this subject: SR EN ISO/IEC 27004 - Information technology. Security Techniques. Information Security Management. Measuring. SR EN ISO/IEC 27004 provides a model for measuring information security⁴ and defines what a measurement method⁵ is.

² SR EN ISO/IEC 27001 – Tehnologia informației. Tehnici de securitate. Sisteme de management al securității informației. Cerințe, p. 7, 6.1.2 Evaluare a riscului de securitate a informației (In English: SR EN ISO/IEC 27001 - Information technology. Security Techniques. Information security management systems. Requirements, p. 7, 6.1.2 Risk assessment of information security), January 2018.

³ Ibidem, 5.2 Policy, p. 6.

⁴ “The information security measurement model is a structure that links a need for information about the relevant measurement objects and their attributes. Measured objects can include processes, procedures, projects, and planned or implemented resources”. See details in: ISO 27004 – Tehnologia informației. Tehnici de securitate. Managementul securității informației. Măsurare, p. 12 (In English: ISO 27004 - Information technology. Security Techniques. Information Security Management. Measuring, p. 12), October 2016.

⁵ “A measurement method is a logical suite of operations used to quantify an attribute relative to a specified scale. The operation may involve activities such as counting occurrences or detecting the passage of time”. See: ISO 27004 – Tehnologia informației. Tehnici de securitate. Managementul securității informației. Măsurare (In English: ISO 27004 - Information technology. Security Techniques. Information Security Management. Measurement), October 2016, p. 13.

According to the ISO standard, “the security measurement model describes how the relevance of the attribute is quantified and transformed into indicators that provide a basis for decision-making”⁶.

Identifying threats, vulnerabilities and associated risks still has a valence. This can also be extracted from the graphical representation previously reproduced in SR EN ISO/IEC 27004: facilitates the establishment of information security policy objectives.

We present the objectives of the Information Security Policy of Public entities in energy sector: “Public entities in energy sector aims at conforming to and promoting the protected values through laws, regulations or requirements of the interested parties in a responsible manner. In this framework, it promotes the protection of its own interests by protecting the enlisted IT resources and resources.

Addressing threats, vulnerabilities and risks to information security, eliminating or reducing them, integrates into the overall risk management policy adopted by Public entities in energy sector and has the flexibility to adapt to social and political dynamics.

Public entities in energy sector is consistently pursuing a secure and reliable work environment for its own staff.

The information security policy follows through the specific organizational, operational and technical measures detailed in the following Standards (e.g. Compliant use of IT resources, classification and management of information and data, etc.) building the trust of the company at the level of staff perception business partners, customers and other stakeholders”.

Hence, we conclude that the information security policy fulfills both the requirement to establish strategic security objectives and the requirement to create a working framework for their achievement by laying down principles and implementing rules. The requirement to create a working framework is materialized by the Policies Follow-up Standards, which in turn set specific (tactical) objectives in line with threats, vulnerabilities and associated risks.

Within S Energy Efficiency, threats, vulnerabilities and risks associated with information are structured into three broad categories:

- A. management risks:
 - 1. inappropriate strategy;
 - 2. not allocating the necessary resources;
 - 3. poor allocation of resources.
- B. organizational or human resources risks:
 - 1. errors, accidents or malicious intent;
 - 2. low awareness of staff;
 - 3. insufficient resources for continuing training programs for dedicated staff.
- C. technical and compliance risks:
 - 1. incomplete or defective configurations of computer resources
 - 2. exceeding the life of the equipment
 - 3. the inefficiency/non-existence of policies, standards or working instructions.

These categories are superimposed over the areas of “Corporate” ICT and “Operations” ICT.

Because top management mandates typically last for four years, this period is considered a life cycle for Policy and Standards. Measurements and benchmarking against the

⁶ SR EN ISO/IEC 27004 – Tehnologia informației. Tehnici de securitate. Managementul securității informației. Măsurare (In English: SR EN ISO/IEC 27004 - Information technology. Security Techniques. Information Security Management. Measurement), October 2016, p. 12.

tactical objectives are weekly, monthly, quarterly, half-yearly, and annual, and their assessment against strategic objectives is done annually and multi-yearly.

We have identified that threats, vulnerabilities and risks associated with information security have to be assessed, treated by measures or acceptance in accordance with the risk appetite defined at strategic management level and the evaluation criteria or metrics to determine whether the objectives of the Information Security Policy have been reached or to what extent they have been reached. The basis of this approach is SR EN ISO/IEC 31000/2010, and specifically SR EN ISO / IEC 27005/2016. The process of risk management (information security) is useful in formulating metrics (SR EN ISO / IEC 27004): “What are the elements⁷ of risk?”, “In what way or what is the process by which the elements determine the impact of the risk?” If we corroborate the principle that “Risk Management creates and protects value”⁸ with <context> or, in other words, with the interfaces and dependencies of the organization, as well as the two with the objectives of the Information Security Policy, we find that there are four:

1. “Compliance with and promotion of the values of laws, regulations or stakeholders in a responsible manner” indicates explicitly regulated values that can be protected and promoted or may be violated, leading to penalties, fines, and convictions. Considering these issues, a valid and relevant indicator is given by the ratio between the numbers of imputations for violations of laws, regulations, and so on registered at the company level and number of imputations confirmed by court decisions or fines, warnings, etc. of the perceived authorities, per unit of time (where the smallest unit of relevant time is the quarter). The formula for calculating the indicator takes into account the following variable parameters:

a. the number of imputations per unit of time, the number of imputations confirmed per unit of time, the ratio between them:

i. $\frac{I_{cx}}{I_x} \leq 1$ where I_{cx} is the number of imputations confirmed, and I_x is the number of imputations recorded. The value of the report cannot be more than one, and the worst-case scenario implies $\frac{I_{cx}}{I_x} = 1$.

b. costs due to confirmation imputations, costs related to the protection of legal values, the ratio between the pecuniary value of the penalties and the costs related to the protection of legal values:

i. $\frac{V_{px}}{V_i}$ where V_{px} is the pecuniary value of penalties, and V_i is the amount of implementation of the measures necessary to avoid penalties.

The objective is that V_i is less than or at most equal to 40% of V_{px} per unit time.

2. “... the protection of enlisted IT resources and resources” refers to the existence and implementation of the Information Security Incident Response Plan and the Business Continuity Plan. In this context, valid and relevant indicators can be considered: the ratio between the number of reported incidents and the number of incidents solved; the response time for a security incident; the documentation, publication and internal sharing of the solutions to a security incident; types of CIA security incidents (privacy, integrity, availability). The smallest unit of time that these indicators can be reported is the week. A dynamic representation can track the weekly, monthly, quarterly, semester, yearly. The indicators are accessed via SIEM. Figure no. 1 reproduces the Security Incident Response Diagram. Sources of reporting a security incident may be: automatic monitoring systems, ICT staff assigned to manage IT resources, other types of personnel, state authorities with

⁷ SR EN ISO/IEC 27004 refers to <elements> with the terms <attributes> or <relevant attributes>. The measurement model reproduced according to SR EN ISO / IEC 27004 explicitly indicates this.

⁸ SR EN ISO/IEC 31000 – Managementul riscului. Principii și linii directoare (In English: SR EN ISO/IEC 31000 - Risk management. Principles and guidelines), July 2010, p.14.

responsibilities in the prevention and fight against cybercrime. Referring to a compromise indicator (IOC) brings an obligation for all organization staff to report it.

As a rule, Electrica staff will use the Helpdesk system to report security incidents/compromise indicators (IOC) with a statement that it is a security incident. If this is not possible or the use of the IT resource involved in the incident is inoperable, contact the ICT Security Officer directly. The ICT Security Officer contacts the IT staff assigned to manage the IT resources and requires isolation or containerization of the affected resources. Depending on the evolution of the events, isolation and containerization will apply dynamically to the affected areas. First, the context in which the incident occurred, namely with what other systems and equipment are communicating the affected resource, what roles are defined for the use of the resource, which user has accessed it and what other resources it operates. The ICT Security Officer coordinates the actions required to remove and eliminate security incidents and informs the ELSA Responsible with ICT Security. The ELSA Security Officer informs, depending on the severity of the security incident, the ELSA Management Board or other interested parties, to disseminate to the Electrica staff through the responsible communications staff the necessary information about the actions taken and alert the risks. The Management Board may take the decision to implement the necessary measures for business continuity in the event of a disaster.

3. "... building the trust of the company at the level of perception of its own staff, business partners, customers and other stakeholders". When taking this form, two directions were considered:

a. *Education, awareness and adoption of conforming behaviors of staff.* Education is done through annual sessions covering information security issues and training on employment. Built indicators look at the quality of the theme and the relationship between scheduled sessions and completed sessions (report refined by analyzing the test results obtained by the participating staff). Indicators are annually measured.

b.



Figure no. 1: Test results Semester I 2018

c. *Segregation of responsibilities so as to ensure the best traceability,* coupled with ensuring compliance with resource-conforming standards. Ensuring consistent resource use standards is a goal that is measured by the relationship between compliance obligations and the number of violations per staff member or department per unit of time. Usage standards contain precise instructions that can be monitored through the SIEM monitoring system so that the measurements can be refined as desired on a flexible time scale, but chosen in such a way that the results can be corroborated and aggregated in other indicators. Examples of consistent usage rules transformed into precise instructions that can be tracked through SIEM

include <password policy>, <unauthorized access to resources>, <introduction of unauthorized software>.

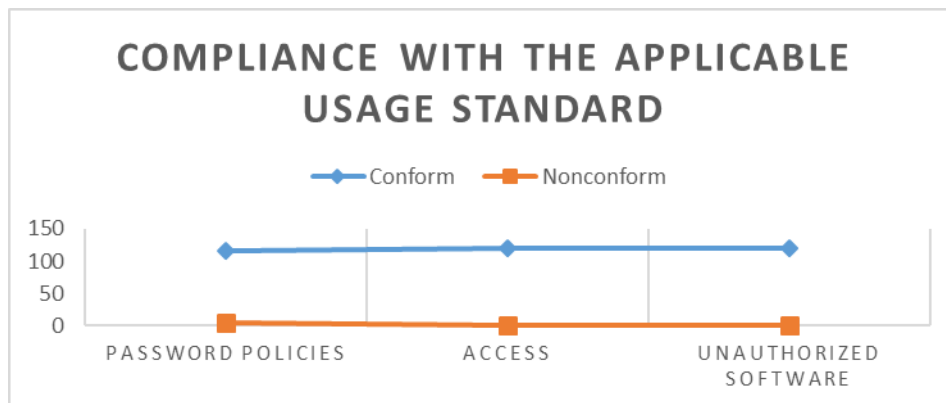


Figure no. 2: Compliance with the applicable usage standard

4. The information security policy and standards that achieve the granularity of the desired implementation are the result of resource inventory, as we have shown at the beginning. We can represent the organigram of the organization as a graph and <context> as variables that control the “fine-tuning” of information security policy. If all variables are defined and taken into account, the uncertainty associated with information processes and flows may be substantially reduced. However, for this to happen, a stable, coherent, predictable <context> is needed. The associated indicator is given by the number of revisions of policy and standards per unit of time, where the appropriate time unit is the year.

Conclusion

Information security policy convey two things: a. that management is aware of the value of information and as a result establishes the objectives or the framework for the objectives to be attained; b. the fact that management assumes the regular evaluation of the objectives or the framework and their continuous improvement.

For the energy domain, especially for ISPDs, we have found that the four (4) identified evaluation criteria are constant and can be iterative for each life cycle of the information security policy. On the other hand, their continued adaptation to the dynamics of social and economic reality is able to ensure an adequate risk management. That is why we are looking for their relevance to be extracted from the application of future versions of ISO 27001.

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THE DESIGN OF A CYBERSECURITY PLAN FOR CRITICAL INFRASTRUCTURES

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Abstract: *Cybersecurity for critical infrastructures was not a priority all the time. At the beginning the focus was on other aspects of critical infrastructures like physical reliability and redundancy. Nowadays, however with the fast-growing digital world and the multitude of threats continuously evolving, cybersecurity became a top priority. The first part of the paper will present the critical sectors of modern society, the cybersecurity problem and the interdependencies that are between critical infrastructures. The second part illustrates how critical infrastructures can be modelled and simulated in order to better understand them and discover unknown vulnerabilities. Finally, the third part will have as purpose to analyze the sources of vulnerabilities, and to bring in our attention two models for increasing cybersecurity in infrastructures, used in present.*

Keywords: *cybersecurity plan, critical infrastructure, critical sectors.*

Introduction

Over the last decades, organizations have significantly changed the way how they provide services to their customers. Their productivity has considerably grown, the main factor of this change being the information technology solutions. These organization as well as people consume electricity, use the telecommunication infrastructure, the transport infrastructure and so on, but without these infrastructures many organizations would cease to exist and the society will be seriously affected¹.

Nowadays, the protection of critical assets is considered a supreme objective by all modern nations around the world. But it is a long way from having a portrait of what critical infrastructure is and what critical infrastructure protection actually means. We need firstly to understand the degree of complexity of the situation we are confronting with.

In Europe the entity that deals with the critical infrastructure protection is the European Programme for Critical Infrastructure Protection (EPCIP). EPCIP is based on the 2008 Directive on European Critical Infrastructures. It has the job to identify critical infrastructures from the European territory and to find the best approach in trying to improve their protection.

Critical infrastructure protection is a topic that cuts across many disciplines and jurisdictions. It has a lot of policy issues at one corner which are so different form the scientific and engineering issues from the other corner.

¹ Toomas Viira, *Lessons Learned: Critical Information Infrastructure Protection - How to protect critical information infrastructure*, IT Governance Publishing, January 2018.

1. Critical Infrastructures

Critical infrastructures (CI), are most often seen as facilities and services with a great impact on the society's wellness. In a more comprehensive wording, critical infrastructure is referring to the processes, systems, technologies, networks, assets and services essential for safety, health, development of the economy, and well-functioning of the society².

The term "critical infrastructure" did not exist before the 1990s. The first sectors that were considered critical infrastructures were the freshwater sector and the electrical energy sector, because the public wanted always to have water at the faucet and the electric bulb always to produce light when the switch is on. The number of critical sectors quickly grew and until 2003, when there were 13 sectors plus 5 key assets, which again expanded to 18 sectors and consolidated in 2013 to 16 sectors³. Critical infrastructure sectors are as follows:

- Freshwater and wastewater sector - water treatment, storage, drainage and sewerage;
- Energy sector - electricity, oil and natural gas;
- Transport sector - includes terrestrial, naval and air transport;
- Nuclear power plants, nuclear material and nuclear waste - includes nuclear reactors and nuclear medicine;
- Health care and public health - includes hospitals, clinics, mental health services, youth care and family service;
- Government institutions - federal governmental buildings;
- Information technology - hardware, software, services and systems;
- Food and agriculture sector - includes farms, animals, restaurants, food production, processing and storage;
- Financial services sector - includes investments, loans, insurance;
- Industrial defense bases - where design and development of military weapon systems are carried out;
- Emergency services - police and fire departments, medical services and public works;
- Communications sector - including the Internet, telephone and transmission lines, wireless communications frequencies, GPS satellites, television or satellite calls;
- Critical production sector - includes the production of primary metals, electrical and transport equipment, and various types of machinery;
- Dams - used for hydroelectric power, water supply, irrigation, flood control, river control and recreation;
- The chemical sector - this includes basic chemicals, specialized chemicals, pharmaceuticals and consumer products;
- Commercial facilities - including events, public gatherings, sports leagues, etc.⁴

2. Cybersecurity problem in CI

Nowadays all facilities are controlled by an Industrial Control System (ICS). An ICS integrates systems such as Supervisory Control and Data Acquisition (SCADA) and

² *Critical Infrastructures*, Public Safety Canada, Government of Canada, May 22, 2018, available online at: <https://bit.ly/2MupG8r>, accessed on August 07, 2017.

³ T. G. Lewis, *Critical Infrastructure Protection in Homeland Security: Defending a Networked Nation*, 2nd Edition, Wiley, 2014.

⁴ *Cyber Security Awareness Week 5: Protecting Critical Infrastructure from Cyber Threats*, One Path blog, available online at: <https://bit.ly/2vVIXqX>, accessed on August 09, 2017.

Distributed Control Systems (DCS). This digitized systems are common in a critical infrastructure and thus the number of cyber-attacks has continuously grown over the years. In order to properly function, ICSs are using operating systems, applications and other software components. To have a decent level of security these components must have availability and integrity, followed by confidentiality. Probably the most important principle is availability, because an unavailable CI can conduct in worst case scenario to a true disaster.

Another threat comes from the lack of knowledge about internal components. Human error can cause misconfiguration of components like the Programmable Logic Controllers (PLC) or the Intelligent Electronic Devices (IED). Many years before, the ICSs were using a private network, which was not connected to the Internet, this made the ICS network pretty secure. Time has changed, and so the expectations, today real time monitoring, concurrency, remote operation, have made ICS more prone to attacks, being exposed to more threats. Because they are so complex and having a considerably number of components a good practice in trying to secure SCADA systems is to use the defense in depth technique.

We can conclude with the rising problem, how we can protect a huge network of such complexity. One thing is for sure clear, that it is economically impossible to protect every single component of any critical sector⁵.

3. Critical infrastructures interdependencies

Because the entire society is based on the proper functioning of critical infrastructures among all sectors, a disruption for example of only one facility that is considered critical, will have a massive negative impact, not only in the sector of residency, but in others, too. This is happening due to the interdependencies of CIs. The following diagram shows the dependencies between different critical sectors.

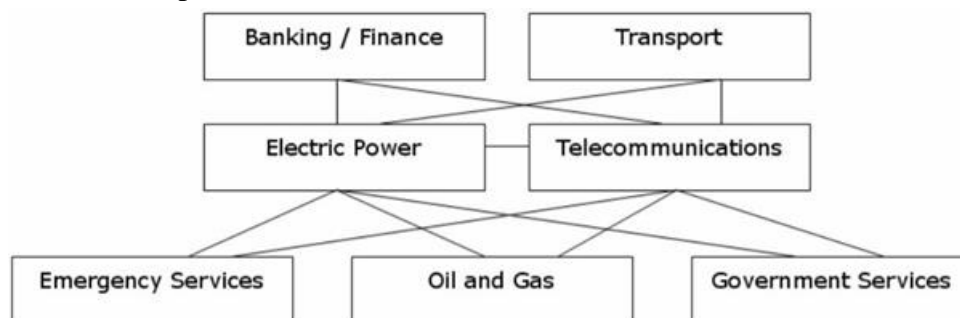


Figure no. 1: Different CI depending on each other⁶

When a CI is dependent directly by another one, this is called *direct dependency*. An *indirect dependency* is when let's say CI2 is dependent on CI1 by a direct dependency, and also CI3 is directly dependent on CI2, this means that CI3 is indirectly dependent on CI1. In contrast to the dependencies, interdependencies are bidirectional relationships. Often dependencies are so complex and cannot be easily found, one of the reason which increases difficulty is that some dependencies depend on the critical infrastructure's state. Being in state 1 is possible that a CI to have different dependencies, unlike those that it might have

⁵ H. J. Leandros, A. Maglarasa, Ki-Hyung Kimb, *Cyber security of critical infrastructures*, February 2018.

⁶ E.-S. C. Rosslin, John Robles, Min-kyu Choi, "Common Treats and Vulnerabilities of Critical Infrastructures", in *International Journal of Control and Automation*, vol. 7, Science and Engineering Research Support Society, South Korea, 2014.

being in state 2, for example. The dependencies and interdependencies are structured into four classes:

- Physical interdependencies* - It can be said that two infrastructures are physically interdependent if the operation of one of them is dependent on the output of the other one.
- Cyber (inter)dependencies* - An infrastructure has cyber interdependency if it is dependent on the information transmitted through the information network.
- Geographical (inter)dependencies* - Two or more infrastructures have geographical interdependencies if they are spatially close one to each other. Events such as explosions may affect nearby elements of another infrastructure.
- Logical (inter)dependencies* - Two infrastructures are logical dependent if the state of one is dependent by the state of the other one by not a physical, geographical or cyber dependency. This type occurs via the control procedures or other mechanisms⁷.

In finding vulnerabilities, interdependencies are very important. All the interdependencies must be found, if some are not traced, vulnerabilities related to them will not be known.

4. Critical infrastructure modelling and simulation

The interdependencies are playing a very important role here. Because of their dependencies critical infrastructures are forming huge networks. A good start in trying protecting this needful assets is to describe and evaluate them, in order to be easier to find vulnerabilities.

In developing a model would be much easier if the critical sectors would have been used decoupled systems, but that is not the case. Firstly we need to prioritize the sectors, in order to have a better view of how they impact the society. In figure no. 2 we can see how the scientists from the National Infrastructure Simulation and Analysis Center from Albuquerque thought to prioritize the critical sectors.

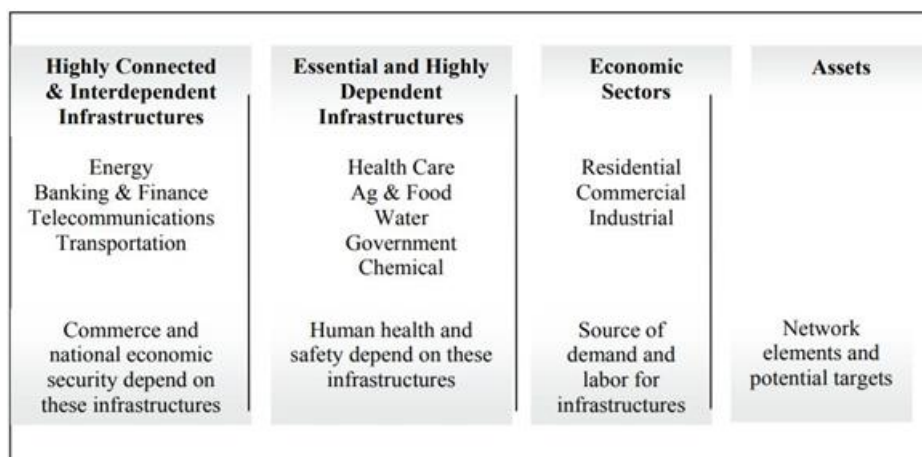


Figure no. 2: Critical sectors classification based on their characteristics⁸

A way in which we can classify the models is by how realistic or abstract they are. A realistic model is a model that has a high level of trust. In a simulation a model can

⁷ T. K. K. Steven; M. Rinaldi; James P. Peerenboom. "Identifying, Understanding, and Analysing Critical Infrastructure Interdependencies", in *IEEE Control Systems Magazine*, December 2001.

⁸ Theresa Brown, *Multiple Modelling Approaches and Insights for Critical Infrastructure Protection*, National Infrastructure Simulation and Analysis Center, available online at: <https://www.sandia.gov/nisac-ssl/wp/wp-content/uploads/downloads/2012/03/Multiple-Modeling-Approaches-and-Insights-for-Critical-Infrastructure-Protection-2006-2827-C.pdf>, accessed on November 12, 2018.

behave like how a system is behaving in real world, with a high fidelity rate. Real models are very difficult to develop due to their high complexity and because they may or may not describe accurately the system under conditions that are not known yet, abstract models are preferred. Abstract models are much simpler, implying much less details, computation and development time. This type of models under simulation can also evaluate a system in uncertain conditions⁹.

Modelling and simulation of critical infrastructures can be done following several criteria: modelling focus, methodical design strategies, types of interdependencies, types of events, course of triggered events, data needs and monitoring area.

Modelling focus may follow two approaches: *qualitative* and *quantitative*. The qualitative approach is done through interdependencies analysis, in this way the interdependencies are analyzed for their dimensions and characteristics. This type of analysis is usually completed after hours of debate and usually does not uncover critical vulnerabilities. The quantitative approach is done through system analysis. System analysis is usually done by computers, being very complex and time consuming.

Methodical design strategies. Two strategies can be followed: *bottom-up* and *top-down*. In the bottom-up approach the system is described starting from its smallest functional parts. This type of approach is easy to implement in code and as long as the input data is sufficient, the results are very precise. It is also less prone to errors than the other approach. The top-down approach is focusing on the all system properties. It cannot accurately identify the low-level factors, which in the end can alter the final results.

Types of dependencies. Usually in modelling and simulation not all types of interdependencies are taken into account. The interdependency types have been discussed in a previous chapter.

Types of events. There are three types of events that can occur: accidents, attacks and failure events. Accidents have a large range of sources, like natural disasters or transport accidents and others. This type of sources usually came from outside of the system. Attacks are events done by an entity, usually with the purpose to gain financial benefit. Cyber-attacks include information theft, intrusion or denial of service. Failure is the event with the result of a component being out of order. Failures happen mostly due to poor design or due to human operation errors.

Course of triggered events. Interdependencies have disastrous effects when an unwanted event is triggered. They can create loops which in some cases are degrading the systems very fast. There are four types of events: *cascading events*, in this case an unwanted event in one part of the infrastructure, has bad effects in other parts; *escalating events* are a consequence of the cascading events. An escalating event propagates to another infrastructure different of the one where it started. In the infrastructure where it arrives, it may cause serious problems, even stopping infrastructure's operation; *common cause events*, a common cause event is a type of unwanted events, which when it happens can create problems to multiple different system simultaneously. For example if an accident occurs at the intersection of a street with a rail way both the traffic on street and on rail will be blocked, with just one event; *confined events* this type of events are events that have no cascading, escalating or common cause consequences.

Data needs. A model usually needs input data related to the topology of the system, commodity flows, functioning, modelling parameters and others. Veridical results are influenced by the quality of data, lack of a data availability and data quality has negative consequences to the final results. A model can have a high demand of data or a low demand of data. In the first case to provide reasonable modelling outputs high quantity and quality

⁹ *Idem*.

of data is demanded. We need to be sure that we have the necessary amount of data before we start the simulation. In the second case the quality and quantity of data are irrelevant. In this case the outputs will only be plausible.

Monitoring area refers to how modelling and simulations are done and also to the output data. Depending on what is pursued, the interdependencies models can be divided into four categories: *vulnerability assessment* with the goal to identify the vulnerabilities; *failure analysis* is the first step for vulnerability analysis. Through failure analysis the system's critical components are identified: *mitigation, prevention and self-healing strategies* have the goal to prevent or confine the appearance of new vulnerabilities and also to try eradicate the existing ones; *information generation* has the goal to generate some data at the beginning, when the system characteristics and mechanics are still unknown, to see if some information regarding interdependencies is found.

There are a few of modeling techniques, from them it will be chose the one that is suitable. Some of this techniques are: agent-based modeling, supply demand graphs, hybrid system modeling, system dynamics, game theoretic model, input-output model, hierarchical holographic modeling, high level architecture, critical path method, Petri nets, etc. Further we will have a brief overview of the agent-base model and high level architecture¹⁰.

5. Agent-base model (ABM)

Agent-base model, has the main objective to follow the actions and interactions between agents. Agents are software objects, but they can also be seen as nodes in a computer network. An agent have the ability to communicate with other agents. They even have the ability to learn from the input data which will help them later to be able to change their behavior. Because it's based on other underlying techniques like for example Monte-Carlo, it is seen as a modeling framework.

In critical infrastructure modeling ABM it is important because it has the possibility to emulate an emergent behavior. The agents are shaped after a set of rules. Each rule is based on three characteristics: *location, capabilities* and *history*. The location describes where the agent is located, like coordinates or geographic region, capabilities describe how agents interact and how they adopt changes. History is information about agent's past like its states for example. ABM proved that is it a good simulation and analysis solution for electrical gird infrastructure. The ABM has also some disadvantages. It is very time consuming and needs large amounts of input data, which cannot be always available. Agent-base model is successful used in economics and informatics¹¹.

6. High level architecture (HLA)

High level architecture is an architecture used for modeling and simulating complex systems. Its focus on breaking down a system in multiple sub-systems. In HLA the actions of the sub-systems are managed by the so called run-time infrastructure (RTI). HLA has three main components: *interface specification* this component defines how HLA interacts with RTI; *object model template* is like a framework, which makes possible the communication between the numerous HLA simulations; *rules* which needs to be obeyed in order to be in line with the standard¹².

¹⁰ W. K. Irene Eusgeld, David Henzi, *Comparative Evaluation of Modelling and Simulation Techniques for Interdependent Critical Infrastructures*, April 2008.

¹¹ *Ibidem*.

¹² *Idem*.

HLA is used in many scientific domains and it is the technical architecture standard for all US Department of Defense.

7. Threats, vulnerabilities and cybersecurity

Massive modernization of critical infrastructures through industrial control systems have made possible the management of these structures in a much easier way. But ICS has not brought only benefits, the high connectivity and openness of this systems brought new ways of system infiltration. Another problem is that some ICS are still using old software like, old operating systems and applications which have no longer support.

Security for CIs three decades ago was not so important, the most important aspect was the system's physical reliability. This has quickly change during the last years, when CIs have become prone to ordinary computer threats like malware for example and also the number of actors has increased. There are multiple entities responsible for the attacks against CI:

- *Nation states* are a new type of actors. Because a CI is a valuable target, some states aim to weakness their adversary.

- *Non-state organized threat groups*, also called "cyber-terrorists".

- *Hactivists* have limited technical skills and they are relying on software developed by someone else. They are usually doing protests.

- *Business-oriented attackers* are that type of attackers who will trigger an attack against a competitor-controlled CI for business gain.

- *Casual attackers* are attackers that can launch an attack without a real purpose. There are examples of attacks against CI initiated by them¹³.

Lack of security in CI can have so many impacts and even in a worst case scenario loss of human life. To improve or establish CI security, some models or frameworks were developed like for example the NIST Framework for Improving Critical Infrastructure Cybersecurity.

8. Vulnerabilities

CI have in their composition, critical components. Models and simulation can help in analyzing this components in order to find some of the vulnerabilities of these individual components and also the ones of their interdependencies. The modeling and simulation can be a first step in trying to reveal the vulnerabilities. Even though critical components are usually fail safe, attackers can find ways to bypass the fail-safe mechanisms. This is usually possible due to application layer, which has vulnerabilities and lacks of security. Beside the logical and design, vulnerabilities can also have other sources:

- Security administration.* All ICSs must be governed by security policies. Security related procedures must be predicted upon developing policies, in order for them to be effective. Important components of these security procedures are security plans, implementation guides, security guides and auditing. Security trainings are also a very important way to have an effective staff with a good knowledge, but trainings are often omitted due to their cost. An experienced security administration is every time a must in such a case of CIs, due to the impact that these structures have.

- Network.* Critical infrastructures are controlled by installations. These installations are connected through several networks that are predisposed to attacks. In the last years there was a trend of migrating from proprietary SCADA communication

¹³ R. B. Giuseppe Ateniese, *Critical Infrastructure Protection: Threats, Attacks and Countermeasures*, Wiley, March 2014.

protocols to standards that are more common, like Ethernet and TCP/IP. This thing came along with advantages and also disadvantages. One advantage is that many proprietary protocols usually did not have security features built-in and with the migration a plus of protection was applied. Also using TCP/IP the systems could be monitored from the corporate networks. But this transition had its bad effects, too. For example SCADA is now vulnerable to some application layer and TCP/IP-based attacks which creates a serious problem. Equipments with technologies like wireless sensor networks which use IEEE standards that are low on security were also introduced.

c) Applications in a distributed system can be deployed on each individual component or on a central server and all components to later make calls to it. The communication between components can lead to security violations due to this, in order to prevent data leakage, the channel needs to be protected. In such an environment a trusted infrastructure is needed, in order for messages to be secret and to be checked for integrity. Also the applications for managing critical components need to be very well tested when are developed in order to eliminate a potential zero-day vulnerability.

c) Business and personal. The expansion of CI's network connectivity has facilitated remote monitoring and control. Accessing critical components from distance has increase the attack surface. All the personal, ordinary business and everyone else who is interacting with the systems increases the possible attack surface. Employees are considered a point of failure for the security of an infrastructure. Most often they are victims of social engineering or spear phishing attacks¹⁴.

9. Establishing cybersecurity in CI

Defending a CI against threats no matter their types is a challenge that intrigues many security researchers. An absolute protection of this assets will never be possible due to the costs and the large number of individual components that needs to be protected. There were many debates on this topic and as a result models and frameworks for analyzing and consolidating the cybersecurity were developed. For example the C2M2 model released in May 2012 focuses on the implementation and management of cybersecurity practices from the perspective of information technology and operations technology assets. C2M2 can strengthen the cybersecurity capabilities, prioritize actions and investments to improve cybersecurity, share knowledge and best practices regarding to his topic¹⁵. In February 2014 NIST released the Framework for Improving Critical Infrastructure Cybersecurity (CSF). CSF consists of standards, guidelines, and best practices to manage cybersecurity-related risk.

There are also many other models but probably CSF is the most complete one, even if it is not the most used one.

Conclusion

This paper is an introduction in the wide domain of critical infrastructure protection. We saw how many sectors are considered critical and why the interdependency are complicating so much the security problem. We also saw what threats and vulnerabilities are common to CIs.

A good first approach in finding the vulnerabilities when interdependencies are around, is to model the infrastructure and to do a simulation in order to have a better view

¹⁴ R. B. Giuseppe Ateniese, *op. cit.*

¹⁵ J. F. Jason Christopher, Fowad Muneer, *Cybersecurity capability maturity model (C2M2)*, Version 1.1, Department of Energy, United States of America, February 2014.

of the situation. There are a lot of models to choose from, but always the most proper one for that particular CI, need to be used. To ensure or improve cybersecurity a best practice is to enforce some policies of standards.

Acknowledgements

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USING BLOCKCHAIN TECHNOLOGY IN DESIGNING CYBER-SECURITY SOLUTIONS

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Abstract: *In this paper we aim to analyze the impact of Blockchain technology in the current context of cyber-security, especially in the area of financial transactions. For this, we will first describe the current state of cyber-security and the problems it faces. Because blockchain technology only addresses part of the cyber-security matters, we will explain the response of this technology to each of the domain-specific issues. It is equally well-known that blockchain technology is the basis of many current applications (Bitcoin, Ethereum, Hyperledger Fabric).*

Keywords: *blockchain, cybersecurity, cyber transactions.*

Introduction

Generally, information security is described by three fundamental properties which, within a coherent security policy must be met simultaneously¹: *confidentiality, integrity and availability*.

Confidentiality relates to prevention of unauthorized access to information. It is generally imposed either by communication through a secure channel, to which third parties do not have access, or by encrypting the information so that, even if the communication is intercepted, the information cannot be obtained or it can be obtained much too difficult without knowing a secret a priori.

Integrity lies in the impossibility to modify the information without the recipient noticing that the information no longer conforms to the original. By communicating through a secure channel, integrity is forced automatically, in the absence of any errors that can occur within the channel of communication. Thus, it is sufficient to check for errors, using methods such as *checksum, cyclic redundancy check (CRC), Hamming code* etc. In case of insecure channels, one will use information *digests*. A digest depends both on the information whose summary is made and on specific elements known only to the communicating parties so that, as a result of modifications, a valid digest cannot be recalculated by an attacker of the communication channel that has altered the original information.

Availability resides in securing information against *Denial of Service* attacks aiming to block access to it, including to those who are authorized to access it. Resistance to such attacks is carried out both by means of designing the access to information so as not to allow blocking application resources with too many requests, but also by filtering a large

¹ Jason Andress, *The basics of information security: understanding the fundamentals of InfoSec in theory and practice*, Syngress, 2014.

number of requests and limiting them to a number they can be processed².

Information security is not a new issue. In direct communication through spoken language or through body language, in order to transmit confidential information it is sufficient to take precautions so that no one around could see or hear the message. Along with the rise of indirect communication and information beginning to be transmitted through various means, particularly through the emergence of writing as communication medium, there have been developed various methods to secure information. For example, one of the earliest evidence of using cryptography is in the book of Jeremiah³, where the *Atbash* cipher is used to encrypt the word *Babylon*.

However, the need for securing the information increasingly gained importance over the last century, along with the very alert pace of telecommunications' development, and usage of insecure channels. For example, over the Internet, for information to reach its destination, it passes through a number of intermediate nodes, where it becomes vulnerable to interception. *Cyber Security* is aimed at imposing compliance with some or all of the underlying components of information security (confidentiality, integrity and availability), depending on how necessary is each of them, in the virtual environment which subsumes all communications through an electronic channel.

1. Blockchain technology

1.1. Problem

The cyber security issue focuses on critical information that attackers could benefit from, such as user personal data, bank transaction data, or patient health data. Since the Blockchain technology has applications in particular in the area of monetary transactions, further attention will go mainly towards this area.

Monetary transactions are rather simple in the physical environment, because the currency of the buyer is transferred to the seller in return for a product or service. In the virtual environment, however, numerous problems arise, in particular due to the fact that it is very easy to multiply a certain piece of information, since it is represented merely by a string of bits that can be easily copied, as opposed to a physical object, whose multiplication requires knowledge about the manufacturing process, and perhaps even an investment that would make it possible to run that process. Thus, if in the virtual environment the currency would be held by each user, as it happens in the physical environment, one would very easily multiply the amount of money one holds.

This is called the *double-spending problem*, and usually is solved through a trusted third party that mediates transactions among customers. In this way may be viewed online banking transactions, banks being the trusted third parties who hold funds of each client and do not allow the use of the same funds in several directions. The drawback of this solution is that there is a single check point, and if this is successfully attacked, the whole system would be compromised. Also, in terms of availability, a check point is very vulnerable to *DdoS (Distributed Denial of Service)* attacks. A third problem with this solution based on a trusted third party that mediates the transactions is the need to entrust personal information to this party. With the spread of technology, private data protection is an issue increasingly more present, and custody of personal data of a single point of control can lead to leakage of confidential information⁴.

² M. Udriou, C. Popa, *Securitatea informațiilor în societatea informațională*, Universitară Publishing House, 2010.

³ Scott B Noegel, „Atbash in Jeremiah and its literary significance: Part 1”, *Jewish Bible Quarterly*, no. 24, 1996, pp. 160-166.

⁴ For example, the attack on Snapchat in 2014, which resulted in sending to the public a large number of private photos along with the phone numbers from which they originated.

1.2. Solution

Blockchain technology responds to these problems, being a distributed solution that can check all transactions securely as long as more than half of the participants in this distributed network act righteously.

This solution was originally described in an article⁵ signed by Satoshi Nakamoto and uses a *peer-to-peer* network in which the true result (trust) is given by the majority holding the highest calculation power. The application referred to in that article is *Bitcoin*, an electronic payment system using a virtual currency that is trying to simulate the real world gold, in the sense that although it has no intrinsic value, it can be obtained through an effort (mining)⁶ and it can be used as currency exchange against products or services.

1.3. Basic principles

The Blockchain is a chain of blocks that contain information about all transactions made by users. If at some point a chain splitting occurs, where more competitors want to continue a chain differently, the valid variant of the chain is the longest chain variant⁷. Thus, the system status, the valid version, the *truth* is determined solely by the information stored in the longest chain, because the set of validated transactions determines the State of affairs and the wealth of each user of the network.

The Blockchain is based on a *peer-to-peer* network in which any participant that wishes to carry out a transaction spreads a message with that transaction to all nodes on the network, or to a sufficiently large number of nodes. Thus, each node (also called a *miner*) will get a number of transactions that it will group into a so-called *block*. Forming such a block requires fairly large computing resources⁸, so that all nodes compete to be the first to build a new block. Also, the new block needs to follow an existing chain of blocks, so the data of the new block depends on the data in the previous block (which in turn depends on the data in the previous block, and so on). At the time when a new block is being constructed in a node, it is sent to all other nodes to be added to the chain.

In these circumstances, if the block is indeed valid, all nodes must add the new block and continue the construction of the chain following this new block. The reason the nodes do not continue to work on the block preceding the new block is that the longest chain is considered valid. Thus, if they continue to work on an old block, the chain that would end with that block would probably be the shorter, and all other nodes will regard it as invalid, so any reward received for building this block is also null.

1.4. Building a block

Since the block is located at the base of the construction of a blockchain, the way it is constructed is of particular importance. Without going into details related to a specific implementation, the block contains a list of valid transactions (duly signed by the party that operates the transaction), which are grouped and one which is carried out a digest. Also, the block contains the digest corresponding to the previous block, so direct dependency between the new and the previous block can be verified.

Such information, however, would be easy to obtain, thus not meeting the condition that blocks and resources must be complex. Therefore, in order to make building new blocks more

⁵ Satoshi Nakamoto, *Bitcoin: A peer-to-peer electronic cash system*, 2008, available online at: <https://bitcoin.org/bitcoin.pdf>, accessed on November 15, 2018.

⁶ *Bitcoin wiki: Frequently asked questions*. Available online at: <https://en.bitcoin.it/wiki/Help:FAQ>, accessed on December 26, 2017.

⁷ This method is also called proof-of-work (PoW), as opposed to proof-of-stake (PoS).

⁸ The longest chain is determined not necessarily by the number of blocks it contains, but also by the difficulty of building it. To meet the *fairly large* definition, the time needed to build a valid block must be much longer than the time required to verify the validity of a block.

difficult, a block gets added a certain number called *nonce* decided so the digest of the entire block, including this number, would contain a defined number of bits from 0 to the end of the signature. The problem becomes more complex as the number of necessary zeros gets bigger. Accordingly, each node on the network will search for numbers and try to be the first one to find a number resulting in a *valid* block, with a signature that contains the corresponding number of initial zeros.

What this method does, apart from giving all nodes (*miners*) a chance related to their calculation power, is that each node has a different block for which it has to find a corresponding *nonce*, so a linear search would not be a disadvantage even for the slowest miners. The difference between the blocks for which the *nonce* is mined for consists, on the one hand, in the fact that it is possible for transactions included within the block to differ from one block to another (the transactions are submitted by using the *best* effort approach - not all get to all) but mainly because there is a special transaction that each miner makes it towards himself, which will change the signatures even for blocks containing the same transactions collected from the network.

A note related to building a new block is that adding a larger number of transactions does not slow down the search for a corresponding *nonce*, because the block's digest is made only over a digest of all the transactions⁹.

1.5. Rewarding the miners

There are two methods for rewarding the miners. On one side, each new built block brings a self-awarded reward due to the fact that the miner includes a special transaction, that doesn't have a source but is directed to the miner (or to whomever the bloc-building miner wishes). Therefore this reward is effective only when the miner succeeds in being the first to build the block, to send it to the other miners and, by doing so, the block is included in the main chain. Thus, statistically, the number of blocks built by a miner should be proportional with the calculation power the miner uses. Also, the reward as a value determined in advance and that depends on the current block's index related to the chain's start¹⁰ (otherwise, each miner might reward himself to his liking). If a miner does not award himself an appropriate value, his block will not be included in the blockchain even if he was the first one to complete the block because is not being deemed valid by other miners.

The second source of income of the miners are the received transactions, which often pay a fee to the miner which will include the transaction into a valid block. The amount of these fees is up to the person making the transaction, and the bigger the amount the higher the priority that the transaction would be introduced into a block by the miners (because miners can choose which transaction to include in a block), and so, the transaction would be faster. Because the reward for each block decreases over time, this would become the main source of venue for miners.

1.6. Resistance to attacks

Starting from the *double-spending problem*, launching an attack on a *blockchain* is very complex, therefore this technology is considered to be very resistant to attacks.

In order to launch such an attack, one needs to make a transaction validated by the seller, and then a new transaction on a parallel chain (it is impossible to have on the same chain two transactions using funds from the same source but different destinations), this second transaction must transfer the same funds to another seller, or to the personal wallet, and this parallel chain must be longer the original chain so that the first transaction would be invalidated

⁹ *Merkle trees* are used, and the block signature includes only the *Merkle root*.

¹⁰ After a certain number of blocks - called an epoch - the reward for each block is halved in order to diminish the inflation.

(although the product or the service has been obtained because the initial transaction has been validated by the seller/provider).

If the first transaction was included in a block on the chain, there is, with enough computing power, a chance that two consecutive blocks are computed on a parallel chain before the second block is computed on the main chain. The problem is that, for the main chain the whole network is making computational efforts, while on the parallel chain participates only the attacker. If we stick to the premise that the attackers do not have more than 50% of the entire network's computational capacity, the more blocks are computed on the main chain, the time taken by the attacker to outdo this chain grows exponentially.

Thus, in order to limit the chances of success of such an attack, if the seller wants to be sure of a transaction, it must wait for a number of blocks to be added to the chain following the block containing his transaction. Generally, after three blocks have been added to the chain, information within the block are considered to be safe, since it is very difficult for the attacker to compute more than three blocks in advance compared to the main chain.

Recently a new problem emerged due to the development of mining methods. If, in the beginning using a personal computer was sufficient, lately, dedicated video boards started being used for such calculations since they were much more effective in terms of the ratio between the rewards and the consumed electrical power, and after that, dedicated video boards were replaced by integrated circuits specifically created for such calculations (*ASIC - Application Specific Integrated Circuit*). Because not anyone can afford such mining devices the problem that arises is concentration of a significant computational power in the hand of a few large companies. The problem has been diminished through newer methods of block building, such as the one used by *Ethereum* (<https://www.ethereum.org>), that makes the algorithm depend more on memory¹¹, so that use of fast *ASIC* technology is no longer sufficient to improve the efficiency of the calculations. Another solution that could be implemented in the future, also in *Ethereum* network, is using *proof-of-stake* over *proof-of-work*.

Also, in order to diminish the possibility of such attacks, a very used method is offering transaction fees that are high enough so the venue of a participant that has computational power would be comparable, in case of an attack, to the venue resulted from processing correctly a large number of blocks.

1.7. Proof of Work vs Proof of Stake

The *Proof-of-Work* concept refers to the proof of correctness of a result depending on how much computational power has been used. This is used currently in the *Bitcoin* network blockchain because the valid chain is the one that implied most effort in calculating valid blocks.

Due to the development of large computing centers, *Proof-of-Work* was replaced with *Proof-of-stake*, where participants are trusted according to the venue they have in the currency of the respective network, which brings greater protection against centralizing tendencies. Nevertheless, using this solution can lead to certain problems because it could be more efficient for a miner to vote all parallel chains that are formed instead of concentrating only on the longest chain, which is more effective in the PoW method, fact that could affect prevention of the double-spending problem¹². To solve this problem, two possible solutions were found.

The first one is called *Slasher* and penalizes users that contribute with blocks on several chains simultaneously. In case a participant of the network validates blocks from parallel chains, he/she loses the rewards for those blocks and 33% of the reward is awarded to the participant

¹¹ Ethereum's memory hardness explained, and the road to mining it with custom hardware. Available online at: <https://www.vijaypradeep.com/blog/2017-04-28-ethereums-memory-hardnessexplained/>. Accessed on December 26, 2017.

¹² Ethereum - proof of stake faq. Available online at: <https://github.com/ethereum/wiki/wiki/Proof-of-StakeFAQ>, accessed on December 26, 2017.

who discovered this fact. This solution has its drawbacks, because miners must connect frequently to the network, and if 25 out of the 30 miners assigned consecutively to validate blocks cooperate on an attack, it is possible they simulate a majority and carry on a double-spending scheme. Therefore, the block validators must be well-known and trustworthy. If these risks are acceptable, then the solution is viable.

The second solution is penalizing participation to an invalid chain. This approach is somewhat similar to that of PoW, where participating in a wrong chain is the default. This approach implies greater risks to miners which unwillingly might have not mined on the winning chain when splitting occurred, but, on the long run, these risks are diminished. Thus, the advantage of this method is that it is not necessary to know the validators a priori.

In terms of environmental impact, *Proof of Stake* has the advantage that it requires much less resources to produce blocks, so environmentally is more efficient. For example, the *Slasher* method consumes approx. 90% less power (Bitcoin and Ethereum PoW networks use electrical power of approx. \$1M¹³, while PoS networks consume 95-99% less¹⁴).

1.8. Limitations

1.8.1 Post quantum validity

At this moment, the most popular implementations of the blockchain technology use safe cryptographic algorithms for signature generation (ECDSA), but these algorithms that are based on elliptical curves, although considered to be difficult to penetrate using the current computers, might be penetrated rather easily by a quantum computer using Shor's algorithm¹⁵. There are no known implementations good enough for such computers, but it is very possible that the algorithms that underlie this technology to become redundant with the rise of quantum computers and thus to require major changes in order to be implemented.

1.8.2 Anonymity

Although there are possibilities to make network users more difficult to identify, current implementations do not give much concern to this¹⁶. Thus, due to the fact that all transactions are public, if the recipient of certain transactions is known, all transactions to the corresponding account may be traced.

One of the solutions to this issue is known as *external mixer* and produces diversions within the transaction flow preserving the anonymity of the participants. A different solution would be using several addresses or electronic wallets so that one's activities would not be connected to a single address on the network.

2. Applications

The most known applications of the *blockchain* technology and the innovations it facilitated are: *Bitcoin*, the promoter of this technology, *Ethereum*, based on *Bitcoin*, but with a whole new arsenal of possibilities and *Hyperledger Fabric*, that changes rather significantly the approach concerning this technology.

Bitcoin (<https://bitcoin.org/en/>) is the promoter of the distributed crypto-currencies and has, still, the most significant presence on the capital markets (according to *Coin Market Cap*

¹³ *Idem*.

¹⁴ Vitalik Buterin. *Slasher, A punitive proof-of-stake algorithm*, available online at: <https://blog.ethereum.org/2014/01/15/slasher-a-punitive-proof-of-stake-algorithm/>, accessed on December 26, 2017.

¹⁵ Peter W Shor, „Polynomial-time algorithms for prime factorization and discrete logarithms on a quantum computer”, SIAM review, no. 41(2), 1999, pp. 303 - 332.

¹⁶ *Bitcoin wiki: Anonymity*, available online at; <https://en.bitcoin.it/wiki/Anonymity>, accessed on December 26, 2017.

<https://coinmarketcap.com/all/views/all/>).

The paper introducing the *Bitcoin* system was published by Satoshi Nakamoto on October 31, 2008, followed by, in the beginning of 2009, the first implementation of the system. The first block was dubbed *the genesis block* and has no reference to any previous block.

Following the launch of *Bitcoin*, as a result of the increasing interest for the blockchain technology, several variations of the same concept have emerged, adding new capabilities.

As such, at the end of 2013, the inventor of *Ethereum*, Vitalik Buterin, advanced the idea of a sole blockchain that could entirely use the capabilities presented by all the other solutions. This blockchain would have been programmed to execute complex calculations summing the other projects.

Implementation of this idea took place in 2014, with help from Vitalik Buterin, Gavin Wood and Jeffrey Wilcke. This idea was rather successful, taking into account that nowadays *Ethereum* is the second crypto-currency as capital share, after *Bitcoin*. This project is based on the *Bitcoin* principles, therefore, we will present only the details that show the differences between *Ethereum* and *Bitcoin*.

Hyperledger Fabric is a blockchain framework and is part of the *Hyperledger* projects sustained by *The Linux Foundation*.

Differently from *Bitcoin* and *Ethereum*, which are *free of permission* which means that anybody can join the network, *Hyperledger Fabric* is *permissioned*, meaning that only certain users can join such a network. This kind of network focuses on offering the possibility to build private transactions and confidential contracts, as opposed to those from the *Ethereum* network, which are public.

Conclusions

If, in 2008, blockchain technology was just an interesting idea aiming to achieve objectives never reached before (a decentralized global currency), nowadays this technology is confirmed by the share market that projects based on this technology have (*Bitcoin* - approx. \$260M, *Ethereum* - approx. \$73M) and also by projects backed by important organisations (*Hyperledger* is backed by *The Linux Foundation*, and *IBM Blockchain* is built over it).

Security is obtained through consensus algorithms that use methods such as *Proof-of-Work*, *Proof-of-Stake*, *SIEVE* and so on. These algorithms solve the double-spending problem by involving the majority of the network's users in assessing the correctness of the transactions.

Apart from the security offered by the cryptographic algorithms considered, at this moment, as being safe, this technology brings other benefits, such as high availability, low cost (because it does not involve intermediaries), higher reliability, transparency and confidence - *users do not need to put their trust into an entity*.

Also, with the help of intelligent contracts, complex politics may be enforced, politics that could determine transactions complying with rules clearly established a priori by network users.

This technology, grace to its flexibility, offers a new range of possibilities to the electronic transactions, and the areas it can be used are limitless

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