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Carol - King of Romania
Issued in Bucharest on 8 December 1897

Romanian Military Thinking

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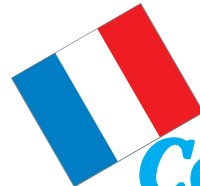
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Communication and Communications in the Information Age

Man has always needed to relate to his fellows, to be in touch with them, to *let them know*, actually to communicate, and this need has driven him to permanently search for the most ingenious and effective methods and means of *spreading the word* as fast and as far away as possible and also of getting informed as soon as possible. Natural and existential needs that have always been met by the technical solutions of the moment. Needs that man, never self-contented, has striven to overcome.

In the several millennia of acknowledged history, the technological progress in the field has been slow, taking into account the fact that, at the end of the 19th century, the mail coach was still *in service*, carrying information at the speed of the... horses, as the Roman chariots did more than two thousand years ago, although Morse's telegraph had shown even the most sceptical ones that information could travel any distance at a speed that could not be measured at that time.

Once the potential of the travelling electron able to carry information was discovered, huge opportunities were opened up, in a very short period of time related to history, for communications, freed from the constraints of classical mechanics, which is understandable even if we think that the electromagnetic wave travels at the speed of light.

It was only a step from Morse's telegraph and Bell's telephone to Marconi's radio and now we are in the Internet Age, able, just by pressing a key, to transfer megabytes and gigabytes of information worldwide, part of the scientific, cultural, economic or other heritage of humanity.

The Signal Corps of yesterday, handlers of telephone equipment and carrier current transceivers, radio and radio relay stations, wizards at switches and keys, for whom the signal and the electromagnetic wave had concrete dimensions

and signal directivity was not an abstract notion at all, have rapidly got accustomed to the new technological coordinates, easily passing from the analogue to the digital signal, from the single-sideband modulation to the frequency hopping signal and information flow. Now they speak naturally, following the need to adapt to novelty, about communication and information systems with satellite capabilities, multi-channel communications, software-defined radio stations, traffic flows, broadband communications...

In the Information Age, communication systems cannot be separated from information systems, as they condition and support each other, in a symbiosis in which neither of the two actors can afford to lag behind. Therefore we expect the continuous escalation of the apparent physical limits of the two systems and the emergence of new dimensions and horizons of the information environment!

The computer, this divine as well as diabolical discovery, which has both fascinated and enslaved us, has connected us with the world. However, unfortunately, man has always used his intelligence not only to meet his peaceful interests but also, maybe more fiercely, to achieve supremacy in his bellicose tendencies. If we accept, and evidence compels us to do so, that the state of conflict is the humankind *state of normality* and that the short periods of peace are only pauses to breathe before future armed confrontations, we will also have to accept that the best creation of the human mind is immediately put in the service of Mars, the God of War. Communications, undoubtedly proved to be the nervous system of any military power, have rapidly gained the aura of being in the vanguard of converting the latest achievements of science to this religion of destruction.

Information and communications technology, information applications and services, information globalisation, information age. We have adopted these terms with ease and optimism in everyday language, and now we have to accept new phrases, not only as a simple linguistic transfer to the area of military language, such as: *information protection, information warfare, cyber defence...* In cyberspace – defined as the fifth dimension, alongside the land, air, sea and space ones, of a future conflict – threats such as terrorism, espionage, sabotage, subversion and organised crime have got manifest more seriously and alarmingly. Terms such as *online warfare, cyber warfare* versus *cyber defence, as well as cybercrime, cyber aggression* may be added to this new glossary. And, last but not least, *information operation* that may generate success or failure in battle and therefore the imperative to win it.

Hence the permanent need for professionals in the field, able to keep pace with the continuous technological leap and to maintain the infallibility of the communication system in ensuring the information flows necessary for the real-time command of the forces engaged in the tactical battlefield. Vital to achieve success in battle, communications also prove necessary to ensure the liaison between combatants and their families at home that, undoubtedly, represent the most important moral support for those engaged in safeguarding the interests of the country thousands of kilometres away, in geopolitical areas that are sometimes extremely hostile.

Explorers in the virtual environment, experts in communications and information confirm their characteristic of genuine fighters prepared to gain information dominance under difficult and unpredictable electromagnetic conditions. Artists that do not sign their works, although they are convinced of their value, they are the people for whom the supreme satisfaction is to achieve, maintain and protect the connection, which has been proved so necessary and has become so banal for the users who often forget how much intelligence and physical effort are employed in achieving and maintaining this natural thing!

On their anniversary, we express our gratitude to all who currently labour with passion and professionalism to conceive, organise and exploit the communication and information systems at all the echelons of the Romanian Armed Forces, as well as to those who have served under the colours of this noble branch over time!

Happy Anniversary!

 *Colonel Dr Mircea TĂNASE*
English version by
Diana Cristiana LUPU

Communication et communications dans l'ère de l'information

Le besoin depuis toujours de l'homme de se mettre en relations avec les autres, d'être connecté avec eux, *de faire savoir*, après tout d'en communiquer, l'a poussé par une recherche constante des moyens les plus ingénieuses et efficaces de *porter la parole* très vite et très loin et aussi d'apprendre plus tôt les nouvelles. Des besoins naturels, existentielles pour qui les solutions techniques du moment ont été posé, chaque fois, à leur disposition. Et auxquels l'homme, jamais contente de soi-même, il s'est efforcé de les surmonter.

Dans les quelques millénaires de l'histoire concrète, le progrès technique dans ce domaine a évolué très lentement, si l'on considère que, à la fin du XIXe siècle, il était encore *en fonctionnement* la diligence, qui portait l'information par la vitesse... des chevaux, comme les carrosses romaines il y a plus de deux mille ans, bien que le télégraphe du Morse avait prouvé même aux plus sceptiques que l'information peut traverser toute distance à une vitesse incommensurable à l'époque-là.

Après la découverte de la puissance du cet électron voyageur, qui transporte l'information, c'est pour les communications, qui se sont échappées par les limites de la physique classique, qu'ont été ouvertes, dans un degré de temps très court par rapport à l'histoire, d'énormes possibilités, mais aussi intelligibles si on pense que la vague électromagnétique pénètre l'éther par la vitesse de la lumière.

Du télégraphe de Morse et le téléphone de Bell n'était seulement une étape à la radio de Marconi et voici nous sommes maintenant dans l'ère d'Internet, dans la mesure où, par une simple pression sur un bouton, nous transportons, à une partie sur une autre de la planète, des mégaoctets et giga-octets de données, qui sont une partie du patrimoine scientifique, culturel, économique ou d'autre nature de l'humanité.

Les transmissionnistes d'antan, qui ont utilisés les appareils téléphoniques et les signales d'équipements, des stations radio et radio relais, des magiciens des commutateurs et du manipulateur, pour lesquels le signal et les ondes électromagnétiques avaient des dimensions concrètes et la caractéristique de directivité n'était pas une notion abstraite, ils ont été rapidement repliés sur les nouvelles coordonnées technologiques, en passant facilement du signal analogique au celui numérique, de la bande latérale unique au saut en fréquence et de flux de l'information. Et aujourd'hui ils parlent, avec le sentiment naturel généré par la nécessité de s'adapter à de nouvelles informations, sur des systèmes de communications et informatiques avec des capacités satellitaires, systèmes de communications multi-canal, stations radio définies software, sur ses flux de circulation, des communications à large bande...

A l'ère de l'information, les systèmes de communications ne peuvent pas être séparés par les systèmes informatiques, mais elles se sont conditionnés et se soutiennent mutuellement dans une symbiose où aucun des deux acteurs ne peut se permettre d'accuser un retard. Attendons donc à une incessante élévation d'apparentes limites physiques des deux systèmes et de révéler de nouvelles dimensions et des horizons de l'espace d'informations!

L'ordinateur, cette découverte aussi divine et diabolique, qui nous a fasciné et nous a fait ses esclaves en même temps, nous a connecté avec le monde, mais, malheureusement, l'homme a toujours utilisé son intelligence non seulement d'accomplir ses intérêts pacifiques, mais, peut-être plus féroce, pour obtenir la supériorité dans ses tendances belliqueuses. Si nous acceptons, et l'évidence nous oblige de le faire, que l'état de conflit est *l'état de normalité* de l'humanité, que les brèves périodes de paix sont exclusivement des pauses de respiration pour les futures affrontements armés, nous devons accepter que tout ce qui l'esprit de l'homme crée le meilleur est immédiatement mis au service du dieu Mars aussi. Les communications, sans doute elles se sont avérées le système nerveux de toute puissance militaire, ont rapidement acquis l'aura d'avant-garde dans la conversion de récents acquis de la science vers cette religion de la destruction.

La technologie des informations et des communications, les applications et les services de l'information, la mondialisation de l'information, l'ère de l'information... il y a des termes que nous avons adoptés avec aisance et d'optimisme dans le langage usuel, et ici nous devons accepter, non seulement comme un transfert linguistique primaire vers la zone d'expressions militaires, aussi de nouvelles expressions: *la protection des données, la guerre de l'information, la cyber défense...* Dans le cyber

espace – définie comme la cinquième dimension d'un futur conflit, à côté de la terre, par l'air, sur la mer et du cosmos – se produit, de plus en plus grave et plus inquiétant, des menaces comme le terrorisme, l'espionnage, le sabotage, la subversion et le crime organisé. Nous pouvons ajouter dans ce nouveau glossaire tels que *la guerre en ligne, la guerre cyber* par rapport au *cyber défense, au cyber criminalité, aux attaques informatiques*. Et, pas du tout en dernière lieu, *l'opération informationnelle*, celle qui peut générer le succès ou l'échec dans la bataille, mais aussi l'impératif de le gagner.

Il est manifesté donc la nécessité d'avoir des spécialistes en mesure de suivre le rythme avec le saut technologique continue et de maintenir le travail infailible du système des communications pour assurer les flux d'information nécessaires à la conduite en temps réel des forces engagées dans le domaine tactique. C'est les communications qui sont essentielles pour obtenir le succès dans le combat; elles sont nécessaires aussi pour assurer la liaison entre les combattants et leurs familles qui sont restées chez elles et qui représente, sans doute, le plus puissant support morale de ceux qui sont engagés à défendre les intérêts de sécurité du pays aux des milliers de kilomètres, dans des espaces géopolitiques souvent très hostiles.

Explorateurs du cyber espace, les experts en communications et de l'informatique confirment leurs valences de véritables combattants prêts à obtenir la domination informatique en vertu d'un état électromagnétique difficile et imprévisible. Ce sont des artistes qui ne signent pas leur travail, mais qui sont convaincus de son valeur; pour ces gens, la satisfaction suprême représente la réalisation, le maintien et la protection de cette liaison, qui est révélée à la fois nécessaire et elle est devenue si banale pour ceux qui l'utilise et qui, le plus souvent, oublie combien de l'intelligence et combien d'effort physique sont engagés pour atteindre et maintenir ce patrimoine naturel!

A cette fête, le jour des transmissionnistes, pour tous ceux qui, actuellement, travaillent avec passion et professionnalisme à la conception, l'organisation et le fonctionnement des systèmes de communications et de l'information à tous les niveaux de l'Armée Roumaine et ceux qui ont servi, au cours du temps, sous la bannière de la lutte de cette noble arme, nous transmettons une bonne pensée de gratitude!

Joyeuse anniversaire!

Version française par Alina PAPOI

CONTINUOUS WARFARE

Economic and Financial Confrontation (IV)

General (r.) Dr Mihail ORZEAȚĂ

Economic confrontation is very complex, encompassing theories, concepts, procedures, functions and standards. The most important part of economic confrontation deals with concepts regarding the way the companies and the market are organised and function. Although globalisation is a beneficial process for the humankind, it is accompanied by some unnecessary effects such as pollution, illegal immigration, brain drain, facilitation of illegal trafficking of weapons, persons, drugs etc. Being most interested in profit, transnational companies many times disregard the norms and rules regarding safety precautions, ecosystem protection and sustainment of social programmes of undeveloped and underdeveloped countries. Forso manytimes, competitors are involved into illegal activities such as money laundering, blackmail, bribery, espionage etc.

Keywords: *economic confrontation; competition; globalisation; energy; free market; liberalism*

Dimensions of the economic and financial confrontation

Conceptual, structural, functional, information and infrastructure dimensions are among the most important domains of the economic and financial confrontation. It is obvious that all the above-mentioned dimensions are interconnected. On the other hand, the most important role belongs to the conceptual domain, which is the one that influences all the others and, in turn, is influenced by them.

From the conceptual point of view, people are divided in those that support and the ones that oppose some ways of thinking, understanding and utilising the principles and norms of economy and finances functioning at local, state, regional and global level. The undecided ones or those that declare themselves uninterested in this domain will eventually choose one or another variant depending on their level of information and on how inventive those who provide solutions to economic and financial problems are.

General (r.) Dr Mihail Orzeată – Associate Professor, “Carol I” National Defence University, former Deputy Chief of the General Staff of the Romanian Armed Forces.

Clashes between globalisation and regional interests (even isolation in national economy), or market economy versus state-controlled economy, profit by all means versus profit obeying all rules and norms regarding environment as well as consumer rights, and regulated economy versus deregulated economy form the core of the conceptual confrontation in economy.

The best known, actual and having the greatest effects on us, from individual to community level, is the conflict of interests regarding globalisation. The opponents of globalisation call it *“the road to slavery”*¹, *“the new global economic disorder”*², *“the underground source of power”* (Jan van Helsing), blaming globalisation for being ineffective in *“correctly and enduringly solving the problems called global, as protecting the ecosystem, providing food, underdevelopment and so on”*³. Moreover, the opponents of globalisation blame its upholders because they transform it in a real ideology which does not have beneficial effects on the world. This is caused by the *“Absolute Liberalism, known as market fundamentalism, which is as repressive for consciences as Stalinist communism and makes values as uniform as religious universalism does”*⁴.

On the other hand, the supporters of the globalisation process believe that this accusation is *“a hijacking of the sense of globalisation because (...) the so-called global problems of humanity are solved only by the political institutions at global level, which are made functional by the rules of a global society”*⁵.

Understanding economic efficiency, mainly through its most desired effect – profit – remains a hot point of the economic confrontation as far as its conceptual dimension is concerned. Producers as well as service providers sustain that profit is the supreme measure of efficiency. That is why, so many times, they have tried to avoid or at least to postpone implementing environmental protection rules. They know that applying all these rules and norms means adapting or even changing the know-how in order to reduce the toxic substances released into the atmosphere and water and to clean all types of waste materials resulted from production processes. All these measures increase the price of production and reduce the level of profit. Having in their mind the purpose of maximising profit, producers and service providers have considered and managed to put into practice different organisational structures such as cartels, corporations, concerns etc. in order to impose

¹ Pat Robertson, *Agenda ordinii mondiale. Drumul spre sclavie*, Editura Alma Tip, București, 1998.

² Georges Corm, *Noua dezordine economică mondială. La izvoarele insucceselor dezvoltării*, Editura Dacia Press, Cluj-Napoca, 1996.

³ Dinu Marin, *Economie contemporană. Ce este globalizarea?*, Editura Economică, București, 2000, p. 85.

⁴ *Ibidem*, p. 168.

⁵ *Ibidem*.

high prices for their products and services. There are some subsidiary activities of this confrontation, which take place illicitly, within underground or grey economy, inside of the so-called black market – smuggling, illegal trafficking in arms, persons and prohibited substances, utilisation of workers without legal forms, tax evasion, money laundering or gaining dirty money etc.

As for the products and services beneficiaries, they believe that economic efficiency has to consider profit but to subordinate economic processes to additional reasons such as environmental and consumer protection, enduring and sustainable development harmonised with the social, cultural and educational domains of the society.

The supporters of rules and norms to be imposed on market economy want firstly to eliminate the dictatorship of multinational companies and secondly to provide minimum support for national companies, which are less competitive than multinational companies.

The opponents of imposing rules on market economy want supply and demand to be the only accepted mechanism that keeps the free market functional.

From the structural point of view, the supporters of globalisation choose transnational companies as the organisational and conceptual ways of avoiding states and governments control on their businesses. They impose their interests using prices and preferences in the relations with their clients. Gazprom pricing policy best exemplifies the above-mentioned practice: Ukraine pays \$ 240/1 000 cubic meters of natural gas while Georgia pays \$ 110, Moldavia \$ 160, the Baltic States \$ 125, Romania \$ 240 and Belarus \$ 40 for the same amount of gas, which means that *“each state pays a bill that includes a geopolitical price as well as the price for their attitude”*⁶! Noticing the benefits of this practice, Gazprom intends to form a cartel for natural gas, similar to OPEC, in which states from Africa and Latin America will be involved. Finalising this project, Gazprom will have a very powerful leverage to impose its economic as well political interests upon the states, companies and populations dependent on this natural gas cartel.

Inside the functional domain of economic confrontation, the parties involved are individuals, groups of people – from families to communities (ethnic, religious, companies, states, international organisations etc.) –, everyone trying to gain as much as possible at the expense of the opponent party. Each party in this confrontation may impose or negotiate the conditions of the agreement, on a case by case basis. For instance, when producers and service providers are organised

⁶ Mihai Manolache, Lucian Stăncilă, *Securitatea energetică la începutul secolului XXI*, Editura Centrului Tehnic-Editorial al Armatei, București, 2009, p. 83.

in cartels or their companies have secret agreements, they may impose the prices of the products and services without negotiation. If the products and services available on the market exceed demand, producers and service providers negotiate prices and conditions for delivering them to consumers.

Another part of the confrontation in this domain is among producers as well as product and service providers, with the purpose of being the market leader and of imposing their interests on the market against other competitors. The abundance of companies that pretend, via publicity, to be number one in the world/state, as well as owners called “*kings*” of a certain product, tells us something about the mentality of producers, service providers and consumers. Knowing the appetite of consumers for “*the best*”, at “*the best (meaning the lowest) price*”, those who have something to offer use publicity and adequate messages for customers. Many people consider publicity the key to success, even if consumers suspect that some of the messages are not entirely true.

Looking for success and profit, owners of the companies and their CEOs use any method and means, from rising labour productivity to “*games behind the scenes*” like blackmail, bribery, espionage, dumping etc. to make their opponents bankrupt or to persuade them to integrate into holding companies in which decisions belong to the most powerful ones. The methods used by the well-known American multibillionaire John D. Rockefeller to gain monopoly on the oil market were rejected but they promoted him to the position of “*king of oil. (...) He was practically untouchable for any government in the world, which seemed small against him, even the federal government from Washington. (...) With the help of bribery and preferential prices he managed to have friends everywhere*”.

Nothing can function efficiently without information. That is why the information dimension of the economic confrontation is included in all the other parts that compose it. Like many other domains of human activity, information has a dual role – a positive as well as a negative one – depending on the situation. The positive part of information consists of collecting, processing and transferring the new knowledge, contributing to the achievement of new theories, technologies, products and materials. All new and valuable achievements lead people with bad intentions to take them in their possession by spying or stealing. Sometimes these people are thieves or spies working on their own but many times they are hired by the economic competitors willing to gain more money, political and social influence. Using the company’s employees to spy or steal data, projects and everything valuable it produces, and to transfer them to the rival company is quite common,

⁷ George Nicolescu, *În culisele celor șapte surori*, Editura Politică, București, 1984, pp. 36-38.

although not legal and moral. Blackmail and other types of methods to “convince” the valuable researchers in the rival companies are but a few of the unorthodox ways used for winning the economic competition.

The confrontation regarding infrastructure arises from the conceptual and functional domains of the economic competition. As a matter of fact, infrastructure producers try to impose their standards and, if successful, they will impose their prices for expertise, technology and materials on other producers as well as on beneficiaries. Thus, “*the winner takes it all*” and will impose its interests on the market gaining a lot of money and influence. There are a lot of examples – from the maximum noise limit established for jet aircraft on airports to the system of hotel ranking depending on the services provided. Standards are not imposed directly but indirectly, through establishing limits for toxic substances or declaring a certain type of materials as being harmful to people. Sometimes, the interests are gradually imposed using supplementary taxes for products that do not comply with norms and establishing a deadline for full compliance. All these measures cause profits for competitors other than the ones that are fully compliant with the imposed standards to fall because they have to spend more money for achieving new technologies, new materials and devices or to pay extra taxes, which will increase the price of the products making them less competitive. Thus, competition will become harsh and some people will be richer while others will be poorer.

What is economic confrontation - a component of the war or economic warfare?

The economic component of wars has ever existed, and preparing and waging wars have been greatly influenced by economy. More than 2 000 years ago, the Chinese politician and strategist Guan Zhong wrote that “*if you fight for one year, ten years’ accumulation will be exhausted... If the army is not well equipped, you are giving away your troops for nothing*”⁸.

Over time, the economic power of the states has determined the armed forces numerical dimension and procurement, the length of campaigns as well as the capability to provide food, equipment and payment for the fighters.

During the Middle Ages, keeping agricultural and other types of production of any state at an acceptable level, in order to sustain military campaigns, used to require a sufficient number of indigenous workers to continue the economic

⁸ Shang Yang, *The Book of Lord Shang*, published in *The Art of War – Sun Tzu, The Book of Lord Shang – Yang*, Wordsworth Classics of World Literature Limited, Hertfordshire, Great Britain, 1998, p. 120.

activity. This objective was achievable through hiring foreign mercenaries as fighters, whose number covered 25-50% from the total number of the fighters in some Western armies⁹.

Right after the First World War, “states practised autarchy as long as they could: regulating foreign commerce, controlling maritime transports, ending monetary conversion and engaging in economic war against each other”¹⁰.

The interwar period was used for preparing the greatest conflagration in our history – the Second World War – that marked the beginning of a truly total confrontation. Economy had an important role in gaining victory by the allies in that war. Technical and technological innovation introduction in producing weapon systems and other devices for sustaining battles, within the war economy of the allies, gave them superiority over the war production of the Axis states¹¹.

Paul Roberts believes that “Nations needed oil for waging wars but most of the time they were involved in wars for oil. This assertion is especially true for the Second World War. (...) Germany and Japan did not have enough oil for sustaining the industrial and military ambitions and were obliged to make a clear choice: to limit their ambitions or to find oil in other places. Both of them chose the second variant”¹².

According to some experts, the Cold War was won due to the superiority of Western economy, proved during the unprecedented arms race between NATO and the Warsaw Pact. The arms race led the Warsaw Treaty Organisation states and especially the USSR to collapse. The Pact and the USSR were disbanded, which made Francis Fukuyama believe that “liberal democracy is the wave of the future”¹³ and Shintaro Ishihara state that “the 21st century will be a century of economic warfare”¹⁴. Ishihara forecast has come true in what some authors call the “journalistic variant of the notion of economic warfare, like coffee, steel, oil, beef warfare”¹⁵ as well as in a more pragmatic approach, included by great powers into their strategies as the “aggressive use of economic means to achieve national objectives”¹⁶.

⁹ Hew Strachan, *European Armies and the Conduct of War*, Routledge, Taylor and Francis Group, London and New York, 2003, pp. 9-12.

¹⁰ Paul Hirst, *Război și putere în secolul 21*, Editura Antet XX, Filipeștii de Târg, 2001, p. 60.

¹¹ Williamson Murray, *Strategy to Defeat the Luftwaffe 1933-1945*, Air University Press, Maxwell Air Force Base, Alabama, USA, 1998, pp. 1-3, 300-302, <http://www.aupress.maxwell.af.mil>.

¹² Paul Roberts, *Sfârșitul petrolului*, Editura Litera Internațional, București, 2008, p. 55.

¹³ Francis Fukuyama, *America la răscruce*, Editura Antet XX, Filipeștii de Târg, 2006, p. 49.

¹⁴ C. Fred Bergsten, *Japan and the United States in the New World Economy*, published by Theodore Rueter in *The United States in the World Political Economy*, Mc Graw-Hill, New York, 1994, p. 175.

¹⁵ Cristian Băhnăreanu, *Resurse energetice, crize, conflicte*, Editura Militară, București, 2008, p. 21.

¹⁶ US Department of Defense, *JP 1-02. DOD Dictionary of Military and Associated Terms*, www.dtic.mil/doctrine/jel/doddic/data/e/01830.html.

The confrontation-oriented imagination of so many people has given birth to a combination between biological weapons and economic warfare. This mix of actions arose into the sick minds of some strategists who decided to destroy the agricultural production of potential adversary states by utilising certain germs for agricultural plants as well as for animals¹⁷.

Weapons that kill and destroy are no longer the only means for waging current wars. “*Economic weapons*” are, more than in the past, as efficient as the most destructive military weapons. The history of Arab-Israeli wars offers us some very meaningful examples. The Arab-Israeli War in 1973, known as the Yom Kippur War, ended somehow undecided, meaning that no party could claim victory because of the USA and USSR intervention to stop fights. The Arab states in the Organisation of Petroleum Exporting Countries decided to impose an oil embargo against the Occidental countries that supported Israel during that war¹⁸. The result was a sudden and sharp oil price rise, which was double than before the war. The benefits of the oil exporting countries grew at the pace of oil price. The oil price used as a weapon turned back against the exporters like a boomerang via the higher prices of industrial products imported from Western countries.

“*Oil curse*” is another negative effect of the confrontation policy practised by countries that have fossil energy resources. This so-called curse consists in a narrow vision regarding the future economic development of these countries that has led their decision-makers to focus mainly on the extractive industry, neglecting other economic branches. The long-term effect is a growing vulnerability because of the increasing dependence on oil price on the free market. Also, these countries can get into economic and financial collapse in case the facilities for extracting, transporting, processing and distributing oil and natural gas are destroyed, as it happened with Iraq during the Second Gulf War in 2003 and it happens with Libya as well nowadays.

Energy utilisation as a weapon was and most probably will continue to be employed by the Russian Federation for maintaining ex-soviet states within its sphere of influence and for the political confrontation against NATO and the EU in order to prevent Ukraine and Georgia from becoming members of the Alliance.

Some EU member states depend on Russia for between 30% and 80%¹⁹ of their natural gas supply and this situation was suspected to be the main argument

¹⁷ Robert P. Kadlec, *Biological Weapons for Waging Economic Warfare*, published in *Battlefield of the Future*, by Barry R. Schneider and Lawrence E. Grinter – editors, Air University Press, Maxwell Air Force Base, Alabama, USA, 1998, pp. 251-266, <http://aupress.maxwell.af.mil>.

¹⁸ George Nicolescu, *op.cit.*, p. 27.

¹⁹ George Soros, *Epoca failibilității*, Editura Polirom, Iași, 2007, p. 179.

for the negative vote of some Western countries during the NATO Bucharest Summit in April 2008. Of course, there were some additional arguments such as the failure to meet all NATO membership criteria like political stability, people's will to support the decision to join NATO and unresolved conflicts with the neighbours²⁰.

Russia's aggressive attitude against EU member states during the natural gas crisis of 2008-2009 pushed for measures to identify alternative solutions to fossil energy resources and other natural gas providers for Western Europe.

The European states dependency on the Russian natural gas generated, in turn, Russia's dependency on Western Europe, which is the most important of its clients. The intention to redirect the Russian gas to China, Japan and other Asian states requires a lot of time and money to build the necessary infrastructure. Knowing all these aspects and risks, Russian political leaders have made some compromises and also tried to build and lead a "gas cartel" resembling OPEC.

So far, Russia has managed to sign agreements with some oil and natural gas provider states from Africa and Latin-America²¹.

Producers versus consumers

The antagonist relation between producers and their customers is caused mainly by the price. Once prices go high, conflicts between producers and consumers intensify. There are some additional factors that contribute to conflict amplification and sometimes lead to armed conflicts. Among them, it is important to count the denial of access to energy and raw materials, practised by producers against customers. This method leads to tensions between producers and consumers from individuals to communities. Denial can be a total one – I mean physical – or implicit because the price is worth not only in money but also in political, social, moral and other types of conditions. As a result, price is not always affordable for everyone.

The total denial of access to energy resources is known as embargo and it has been used since the ancient times up to now. Embargo can be declared and implemented directly – I mean declared explicitly as it is used by the UN against Iran and North Korea to lead them to renounce their nuclear programmes – or indirectly through some secret political directives like the ones that made East-West commercial relations so harsh.

Most of the time, embargo is used against adversaries in order to determine them to change their behaviour in international relations or to accept some political,

²⁰ Jiri Fidler, Petr Mares, *Istoria NATO*, Institutul European, Iași, 2005, p. 236.

²¹ Michael Sturmer, *Putin și noua Rusie*, Editura Litera Internațional, București, 2009, pp. 148-168.

economic or military conditions required by the international actor that has the desired raw materials, products or services.

Commercial relations are most influenced by politics. For instance, the cold relations between Hungarian King Matei Corvin and Stephen the Great of Moldavia, during the period of 1476 to 1488, led to a ban on arms trade between Transylvania and Moldavia²².

Currently, embargo relations are less and less practised by individual states against each other, except for the great powers that have economic and political power both to do this and to convince their friends and allies to join them into such decisions and actions.

Embargo can be avoided as it happened during the Spanish Civil War in 1937, when oil tankers of Texaco Company supplied Franco's army²³, or during the Yugoslav Crisis in 1995, when Croatia and Bosnia-Herzegovina managed to increase their military potential despite the UN declared embargo against arms trade with countries involved in armed confrontation.

The price rise above the level considered acceptable by some consumers may cause serious dysfunctions in economy, such as inflation or recession that cause, in turn, a chain of other problems like: business decrease or even bankruptcy, closure of companies, rising unemployment, decline in the living standard, rise in social unrest, organised crime development, which will lead to diminished security at individual and community level as well. During recession or economic and financial crises like the current one, many people, including from the richest state of the world – the USA – no longer dream of luxury cars, elegant clothes and holiday homes but of a decent living standard²⁴.

Most of the time, true "*chains of intermediaries*" speculate for their own benefit using the supply and demand mechanism of the free market. They work between producers and customers buying cheap and selling expensive, especially the most desired or needed products for population and industry as well. Although this way to trade has been practised from the beginning of labour division, the 1973 decision of the Arab states to establish crude oil price without consulting with the big companies that used to refine and distribute oil had the most powerful impact over the world. Practically, 11 October 1973 marked the first world oil crisis, because it overlapped with the embargo against Western countries that helped

²² I. Sabău, *Relațiile politice ale Moldovei cu Transilvania în timpul lui Ștefan cel Mare*, în *Studii cu privire la Ștefan cel Mare*, p. 225, quoted by Ion Marian Țiplic in *Bresle și arme în Transilvania (secolele XIV-XV)*, Editura Militară, București, 2009, p. 144.

²³ Luis Bolin, *Spain, the Vital Years*, London, 1967, p. 224.

²⁴ David C. Korten, *Corporațiile conduc lumea*, Editura Samizdat, Filipeștii de Târg, 1995, p. 31.

Israel during the Yom Kippur War. There was “a lack of oil on the market which caused the price of the oil barrel to double immediately. (...) In Washington, the National Security Council chaired by President Nixon had an emergency meeting and decided to declare general nuclear alert”²⁵.

After this unprecedented event, President Carter launched the doctrine of using any means for gaining access to vital resources for the USA, in situations when the access is denied.

Transnational companies and organised crime against states

The new economic world order so vehemently claimed by the transnational companies’ representatives requires that the state should not be the main actor in international relations. If this idea is accepted, they will manage to eliminate all the regulations that forbid the monopoly on the market, which would allow companies to impose prices and to increase their profits more and more. According to some authors, “the world economic system is corrupt and gyrates far beyond human control. (...) Driven by the imperative to replicate money, the system treats people as a source of inefficiency and is rapidly shedding them at all system levels”²⁶. Practically, the money – the “devil’s eye” – as it was named by our ancestors, has amplified many businessmen’s greed and currently they do not have any law and morale except for profit. For gaining more money and power people have committed many crimes, among the members of the same family included.

The state is seen as the major obstacle against commercial companies’ huge capital accumulation and welfare through avoiding or even infringing laws. Companies and organised crime use money for influencing many governments’ decisions. That is why the state has to protect those citizens that cannot protect themselves against people and arms traffickers, against organised crime, against those that practise tax evasion or smuggling. The state has the responsibility to identify and take the appropriate measures against those that hire workers without obeying rules and practise “modern slavery”²⁷. The state enforces the rules necessary for protecting citizens’ rights, environment, plants and animals that may disappear without protection, while “the great finance” has only one rule: profit. Most businessmen are not interested in the environment, in the plans and programmes of the nations in which they invest, in the workers health

²⁵ George Nicolescu, *op. cit.*, p. 28.

²⁶ David C. Korten, *op. cit.*, pp. 23-24.

²⁷ *Ibidem*, p. 265.

or the planet ecosystem because they have neither morale nor compassion. The explanation for this attitude comes from one entrepreneur, quoted by David Korten: *“With each passing day it becomes more difficult to obtain contracts from one of the mega-retailers without hiring child labor, cheating workers on overtime pay, imposing merciless quotas, and operating unsafe facilities. If one contractor does not do it, his or her prices will be higher than those of another who does. With hundreds of millions of people desperate for any kind of job the global economy may offer, there will always be willing competitors”*²⁸.

Noticing unlawful practices of the big companies, US President Carter decided to address to the nation for urging it to stand against companies tendencies to grab not only more money but also the power of influence up to the full state domination saying: *“As sure as the Sun will rise tomorrow, it is sure as well that oil companies will fight for ensuring undeserved profits; if the American public opinion is not heard firmly enough, then the oil companies will be the ones that will determine the Congress attitude in this domain”*²⁹.

Financial experts and strategists as well reveal the finances’ importance for any state’s good governance, and describe the existing risks because of the *“financial variant of the globalocracy on the off-shore markets that lead nation states in a desperate situation to satisfy social functions, those that refer to non-market sectors, with an economy that is devoid of fiscal possibilities because of the most significant part of the capital migration towards those areas that are free from any territorial obligations”*³⁰.

The current form of globalisation, practised by transnational companies, leads us to the conclusion that they want to be absolved of all the moral responsibilities incumbent upon them for the population of the states where they function. Most of the companies’ owners and their CEOs are not that much interested in investing or contributing to the development of the education and health care system within the states where they do business. For transnational companies the borders are only conventions designated to put supplementary obstacles against their businesses, but they manage to find methods to avoid the unwanted rules. Currently, there are many companies that have the headquarters in Europe, *“have factories in South-East Asia, perform bookkeeping in Maldives and distribute products all over the world”*³¹.

²⁸ *Ibidem*, pp. 264-265.

²⁹ The US President Jimmy Carter, in a televised speech in 1978, quoted by George Nicolescu in *În culisele celor șapte surori*, p. 9.

³⁰ Dinu Marin, *op.cit.*, p. 55.

³¹ *Ibidem*, p. 140.

Sometimes, transnational companies feel as important as “*a fine lubricant that, if missing, can cripple the economic engine of the Occident*”³². Thinking this way, the very rich individuals and transnational companies with their income larger than the GDPs of many states where they do businesses managed to do international trade operations without the states’ control in the financial, monetary and commercial domains³³. Those companies were able to “*declare wars, negotiate peace and make silent courts of juries, as well as parliaments and sovereign states*”³⁴.

Organised crime has borrowed, diversified and improved the illegal practices of transnational companies with the aim of “*usurping political power and creating a parallel economy that deteriorates the credibility of fundamental state institutions*”³⁵. Organised crime uses a very complex pool of illegal activities like: usury, gambling, smuggling, producing and distributing fake paying means, tax evasion, money laundering, corruption of the officials, workforce fleecing and so on.

When transnational companies work together with organised crime, then on the world’s map appear the so-called failed states. These states have inefficient governance because their political leadership is at the organised crime beck and call or is powerless to enforce the law because “*its level of competence is reduced and state’s institutions are weak*”³⁶. Within the failed states the heads of the organised crime as well as transnational companies impose their rules and interests and accumulate welfare, power and influence, damaging democracy and the rule of law.

Globalisation versus regional organisations

During this period of unprecedented expansion of the concept of globalisation as well as of its implementation, some states, especially the ones from the Middle East and Asia, perceive it as a new way of imposing the Occident’s will on developing and underdeveloped countries. Those states decided to stand against globalisation and developed countries’ “*economic roller*”, mainly the USA. They have understood that “*globalisation is not a phenomenon everybody can get out as a winner...*”³⁷. The notion and the concept of globalisation rapidly became “*shibboleth, a magic incantation, a pass-key meant to unlock the gates to all present and future*

³² J. E. Hartshorn, *Oil Companies and Governments*, London, 1967, p. 378.

³³ George Nicolescu, *op. cit.*, p. 19.

³⁴ Charles Francis Adams, quoted by George Nicolescu in *În culisele celor șapte surori*, p. 40.

³⁵ Vasile Fulga, Cristina Fulga, Dan Fulga, *Ucideți teroarea. Terorism, antiterorism, contraterorism*, Editura Centrului Tehnico-Editorial al Armatei, București, 2009, pp. 108-109.

³⁶ Chris Donnelly, Senior Fellow at Defence Academy of the United Kingdom, *Foreword to George Cristian Maior’s book Noul aliat. Regândirea politicii de apărare a României la începutul secolului XXI*, Editura Rao, București, 2009, p. 11.

³⁷ Dani Rodrick, *Sense and Nonsense in the Globalization Debate*, Foreign Policy no. 107, 1997, p. 19.

mysteries...³⁸. Those that are prepared will win and the unprepared will lose! This is the direct and rather cynical message of some experts from the US National Defense University, supported by Henry Kissinger: “[The globalised world A.N.] faces two contradictory trends. The globalized market opens prospects of heretofore unimagined wealth. But it also creates new vulnerabilities to political turmoil and the danger of a new gap, not so much between rich and poor as between those in each society that are part of the globalized, internet world and those who are not³⁹.”

Many underdeveloped and developing countries that applied to loans from developed countries’ banks discovered that this was not always a winning solution. Although the general objective of globalisation is the economic progress, this is not achievable for everybody because the capital, especially the Western one, is always aiming at gaining the maximum possible profit in a very short period of time. Practically, the capital movement is hard to be controlled because this “*seeks the highest possible return with the lowest risk, gravitating to where there is the best trade-off between risk and return*”⁴⁰. Thanks to this policy of the “*great finance*”, the majority of the long-term developing programmes in the Third World have not been finalised at the planned levels. Following the easy and big money gaining, many banks have decided to reorient their financial capital towards those states where they could make bigger profit.

Some experts say that putting together states into regional organisations as the EU, Shanghai Organisation, Organisation of the Black Sea Economic Cooperation, Organisation of Petroleum Exporting Countries and some others like them is not a way of implementing the concept of globalisation but an indirect one of rejecting it and protecting their interests against the Western states.

The supporters of globalisation accuse their adversaries of changing the sense of the process. They say that its undesired effects are not produced by the process of globalisation but by the ones that implement it, and the solutions to avoid the negative effects of globalisation have to be political not economic ones. It is true that policy initiates major economic decisions but economic experts should not declare themselves only experts in order to avoid the responsibility for finding solutions when the process of globalisation goes wrong and creates dysfunctions. Globalisation is a multidimensional and not only an economic process. This is the reason why a multidisciplinary analysis should be performed prior to starting it. That is to say decision-makers should know the potential effects in the short,

³⁸ Zygmunt Bauman, *Globalizarea și efectele ei sociale*, Editura Antet, București, 2002, p. 5.

³⁹ Henry Kissinger, *Are nevoie America de o politică externă? Către diplomația secolului XXI*, Editura Incitatus, București, 2002, p. 197.

⁴⁰ *Ibidem*, p. 195.

medium and long term and take appropriate measures to meet the objectives as they were set. It is undisputable that preventing undesirable effects, especially the ones from social and ecological domains, require expensive measures for protecting people and the environment. This solution is not agreed by the transnational and other types of commercial companies and they try to transfer the responsibility and costs to the local authorities, creating a conflict of interests. Commercial companies do not want to understand that investing in protective measures for people and environment as well may cause a lower profit in the short term but a constant and good profit for everybody contributing to the creation of a cleaner and safer world.

The contradictions between the supporters and adversaries of globalisation often turn into open conflicts. It is almost a pattern for G7, G8 and more recently G20 meetings to be accompanied by street protests that may degenerate into violent confrontations. During these conflicts protesters destroy buildings, cars and some other assets. The clashes between protesters and law enforcement forces usually result in wounded on both sides and sometimes even dead. Most of the protesters are youngsters from all over the world. Prior to meetings, protesters use World Wide Web to inform each other about the details of the planned actions, transport aviation to get on time to the places of their actions and cell phones during actions to coordinate their movements. This is a paradoxical situation as protesters use the facilities of globalisation for planning and acting against globalisation. The situation reveals the dual nature of the process. On the one hand, globalisation means progress in various domains of the society. On the other hand, the economic, technological and information advance gained by the developed countries due to globalisation causes a growing gap between them and the less developed countries in terms of the living standard. The gap between rich and poor countries leads to conflicts of interests that may transform into violent confrontations if they are not properly solved. It means to identify economic and social solutions for the ones that are less prepared for globalisation otherwise they will become poorer while the better prepared ones will become richer. It is unfair and dangerous to let the situation as it is because poor people may decide to fight, including by weapons, against the rich ones.

Confrontations between people representing pro and against globalisation organisations and movements are complex. The ones that belong to conceptual and organisational domains are the most impressive. The actional plane encompasses mostly physical clashes between protesters and law enforcement forces, while the conceptual domain consists of ideological confrontations. During debates, each party aims to make the adversary lose its credibility and even legitimacy in front of the public opinion. This sometimes implies

even dirty actions. Miguel Pedrero sustains that a representative of a certain Western state, along with some other colleagues, received the mission to encourage anti-globalisation movements in order to make them lose legitimacy⁴¹. Practically, protesters, especially youngsters, were encouraged to destroy as much as possible in order to send to the public opinion the message that they were violent, uneducated and potential terrorists. All in all, the public opinion should blame their actions and not follow them.

Economic and financial interests sustained by all means versus national policies

Whether we like it or not, the world is divided by interests – personal or group ones – which act in all domains of society. Economic interests are among the most powerful and they are reflected into all other parts of the human activity influencing them, most of the time decisively. Some authors appreciate that *“Presidents and American lawmakers have always favoured those policies that promote energy production from conventional sources (...) because energy producers contribute financially to election campaigns (...) During the 2000 election cycle, oil and gas companies donated \$ 34 million, out of which over three quarters went to Republicans”*⁴².

Starting from the largely accepted idea that policy is influenced mostly by economy and considering some of the conspiracy theories true, one may draw the conclusion that profit by all means has led some people to organise the terrorist attacks on 11 September 2001. The hidden aspect is the decision to start the *“War on Terror”*, which allowed weapon producers, especially from the USA, to make huge profits⁴³.

Other conspiracy theories claim that some people deliberately produced epidemic diseases like Ebola, SARS, HIV or water contamination with fluoride that initially and in small quantity protects teeth but after that produces genetic mutations and bone weakness⁴⁴. Behind all these actions there are big pharmaceutical companies, which want to increase their profits by producing and selling expensive pills to cure the above-mentioned diseases. The authors of the quoted books suspect that all these situations could not occur without the direct involvement of some important officials from Western political bodies.

⁴¹ Miguel Pedrero, *Corupția marilor puteri. Strategii și minciuni în politica mondială*. Editura Litera Internațional, București, 2008, p. 91.

⁴² www.opensecrets.org/industries/indus.asp?Ind=E01.

⁴³ David Heylen Campos, *Minciuni oficiale. 10 conspirații care au schimbat istoria lumii*, Editura Litera Internațional, București, 2004, p. 25.

⁴⁴ Jamie King, *111 teorii ale conspirației*, Editura Litera, București, 2010, pp. 61, 68, 78-79, 187, 210.

Some other scenarios belonging to conspiracy theories category deal with controversial aspects of some very important events in the world history, which have not been satisfactorily solved yet. One of the most known is the assassination of President J. F. Kennedy. Officially, he was killed by a lonely sick mind individual apparently working for and indoctrinated by the Soviets – Lee Harvey Oswald. Oswald was killed in turn by another single person, prior to presenting in front of the jury. Putting together all the facts, the conspiracy theories supporters blame many persons from the US Government, industrial-military complex and heads of Mafia clans that were interested in killing the President. The reasons of all these persons were related to big money that was supposed to be made out of oil businesses, illegal trafficking and weapons trade and use. J.F. Kennedy promised to withdraw American troops from Vietnam if he got a second term in office. Also, he decided to take more actions against Mafia businesses. Among the arguments presented by conspiracy theories supporters are: the decision of Lyndon Johnson, who was Vice President and became President after the death of Kennedy, to supplement troops in Vietnam, decision expected by the industrial-military complex and Mafia as well. Moreover, conspiracy theorists blame, among many other actions and implications, the way of conducting inquiry by the Warren Commission and the persistent secrecy over most of the official documents related to the event⁴⁵.

Another similar event happened in Central America, in 1981. Then, the Presidents of Ecuador – Omar Torrijos – and Panama – Jaime Roldos – were killed by a set up air crash. According to John Perkins, *“They were assassinated because they opposed that fraternity of corporate, government, and banking heads whose goal is global empire”*⁴⁶.

The above-mentioned events reveal the hidden and pitiless face of the confrontation between economic contesters. When the economic interests of certain companies and organisations – no matter whether they are legal or illegal – clash with other interests, even public one, then people without morale and decency use all means to eliminate their opponents or to make them lose credibility and legitimacy.

Reason urges us to renounce performing excessive actions, in order to protect our and other people’s health and welfare. Despite this way of thinking, there are still people who do not care so much about their future. According to some statistics, *“The Americans are the most profligate users of energy in the history of the world. A country with less than 5% of the world’s population consumes 25% of the entire planet’s energy. It happens not only because they have the most powerful economy*

⁴⁵ *Ibidem*, pp. 98-103.

⁴⁶ John Perkins, *Confesiunile unui asasin economic*, Editura Litera Internațional, București, 2007, p. 10.

*but also because the American lifestyle is twice as energy-intensive as that in Europe and Japan, and about ten times the global average (...) and because the American power depends mainly on oil and other fossil fuels, the US sees itself as having no choice but to defend the global energy infrastructure from any threat and by nearly any means available – economic, diplomatic, even military*⁴⁷.

Another unbelievable situation was created by Saudi Arabia, which complained to the World Trade Organisation blaming “*European programmes for reducing CO₂ emissions that impose unfair constraints over their oil trade*”⁴⁸.

Economic-financial crisis versus moral crisis

The most important part of the new generation seems to be educated to know first how to impose its demands and interests rather than to learn how to produce goods and solutions for our common present and future. Their trainers are not only the teachers who gather so often in the street but the street itself, so populated with protesters of all types, who want to be listened to and their demands to be solved as soon as possible. It is their right! Despite all the above-mentioned aspects, it seems that most of us have learnt how to protest and apparently do not care so much about the other people with whom we should harmonise the rights. Strike is, or at least it should be, an extreme way of protesting against all types of unfairness in order to make those empowered with legal authority to take appropriate measures to correct the dysfunctions of the society. Lately, there has been a real chain of strikes, especially “*spontaneous*” ones. What a pity that all these actions affect so often the other citizens’ rights – to be transported to and from the workplace, to be assisted in all the domains etc. – and they have no contribution to the strikers’ problems and they cannot solve those problems, either. So what? Some people like to appear in front of television cameras (“*on the glass*”) or in newspapers columns and in such a way somebody may notice them and will make them an offer they cannot refuse: to change the protester position with the resource distributor one. There are enough similar situations and perhaps these practices will not be stopped so soon.

Apparently, decision-makers look for solutions and people with ideas and enough energy to implement them. In reality, there are and there were enough solutions but the “*lack of will*” seems to be the problem. More and more people are interested in an image built during television talk-shows, meaning an image based on words and not on facts. The famous slogan “*pretend to work*”, heard

⁴⁷ Paul Roberts, *op. cit.*, p. 25.

⁴⁸ *Ibidem*, p. 390.

during one live television transmission with 1989 potential revolutionaries as main characters, is still contagious for so many of our countrymen. Everybody would like to earn more money and to have a better life, but minimum decency should urge us to refer to norms of behaviour in society – legal and moral ones. There are “*luxury unemployed people*” in our country who receive more money than most of the workers, even if they work in risky conditions or have important responsibilities for the entire society.

Famous economic experts have pointed out greed and lack of caution among the most important causes of the current world economic crisis. Unfortunately, it seems that the echo of this warning was too weak for many Romanians. Most of us complain about the budget because it is too small and economic growth does not exist, but we do not take legal actions to stop illegal traders and black market functioning. Also, we continue to criticise others and we do not care so much about our “*sweet laziness*” that has led us to the current situation. We laugh at our problems hoping that time will solve them instead of us and pretend not to see or understand troubled situations. Although most of us know that this attitude is not the one our young generation should follow, not too many cut their bad habits. Do we really care if the young generation will curse us for the legacy we leave them? Do we really understand that we are guilty for our future and our heirs as well?

Belonging to different groups, parties or communities and divided by interests, most people think and act aiming at today rather than at tomorrow. That is why so many alerts related to fossil fuel reserves consumption and the necessity to switch to renewable and non-polluting sources of energy seem not to be considered as important as they really are. “*There is not a single day passing without a new revelation, without a new title in a newspaper, which is meant to bring new evidence that our brilliant energy success comes at great cost – air pollution and toxic waste sites, blackouts and price spikes, fraud, corruption and even war*”⁴⁹. Politicians and businessmen do not hurry to take decisive measures to reduce pollution and the risk of a global human catastrophe. On the other hand, the unconventional energy supporters seem not to assess correctly the economic impact of switching from fossil energy resources to renewable and non-polluting ones. It seems that they do not have enough flexibility and vision because “*the way towards a new energy economy is full of political and economic risks. Nobody knows when and if new technologies will be ready or how much they will cost and what sort of problems they will create. Very few countries and companies desire to be the first*

⁴⁹ *Ibidem*, p. 9.

*to know and to throw them forward (...) postponing any significant measure for the current economy – making change, when it produces, so sudden and devastating*⁵⁰.

Generally, new ideas are received with reluctance and many times are rejected. Resisting change was, is and will continue to be an important obstacle to the progress. Sometimes, resistance to change has strong reasons because some of the change promoters focus on advantages but forget or even hide the disadvantages: *“People who praise technology say that it has brought about a better living standard, meaning a greater speed, a greater variety of options, more free time and more luxury goods. None of these benefits tells us about satisfaction, happiness, safety, security or human capacity to preserve life on the Earth*⁵¹.

The economic confrontation appeared with the division of people as producers and consumers. The forms of confrontation have varied in accordance with the evolution of human society and I assume that it will continue to exist until the opponents come to a common understanding regarding economy and finances functioning and use. This future seems a little bit utopian because economy and finances must serve all people through such mechanisms and norms that will not allow discrimination and unfair practices. It means that everyone will understand the others needs and will follow the common sense and legal rules as well. In other words, cheating, bribery, corruption and black market will disappear from businessmen practices for good.

⁵⁰ *Ibidem*, p. 20.

⁵¹ Jerry Mander, *In the Absence of the Sacred*, Sierra Club Books, San Francisco, 1991, p. 26.

AIR FORCE

– Security Provider in the Current Context of the Changing Security Environment and the Irregular Warfare Implicitly –

Major General Virgil RISTEA

The author approaches the issue of the Air Force as a security provider in the context of the changing security environment and of the irregular warfare.

First, he presents the characteristics of the Air Force at all three levels of involvement of air activity: high-intensity operations, airspace control and specific actions of air power within joint operations.

Then, he writes about the need for transforming the Romanian Air Force in order to meet the current security challenges, concluding that, in its efforts to strengthen the capacities of responding to new threats, Romania, as a member of NATO and the European Union, will have to achieve a reconfiguration of its air power in order to perform new types of missions within remotely conducted wars and operations, in peacetime, during crisis and at war.

Keywords: Air Force; Irregular Warfare; air power; airspace; aircraft

Air Force Characteristics and Use in Irregular Warfare

The main features of the Air Force that can be exploited effectively in today's changing security environment and, implicitly, of the irregular warfare are: height, speed, range and omnipresence. Thus, exploitation of the third dimension of airspace through the use of the air means combat potential to obtain control over the airspace is a prerequisite for successful operations in any type of conflict. Furthermore, the spatial extension of the fight with the aggressor throughout the whole depth of the conflict areas diminishes the enemy possibilities of undertaking activities in the desired areas.

Air Force characteristics are shown at all three levels of involvement of air activity: *high-intensity operations, airspace control and specific actions of air power within joint operations*. The use of air power in such operations and activities comes from the fact that air forces are the only forces

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able to carry out some of the basic strategic missions of irregular warfare. These include:

- the opponent's detection and surveillance and reconnaissance of the conflict areas in order to identify vulnerabilities at the strategic level;
- the air power ability to attack the "*strategic centre of gravity*" of the opponent, beyond the range of the land component;
- the air power ability to neutralise the opponent by hitting its command structure and by neutralising its air, land and sea means of communication.

Starting from the airspace level of control classification – *favourable air situation*, *air superiority*, *air supremacy* and *air dominance* – and taking into account the principle that superiority/air supremacy is the primary objective of any operation, ensuring freedom of action and the certitude that you are not attacked, it is obvious that, in today's changing security environment and, implicitly, of the irregular warfare, this goal is relatively easy to obtain, since the existence of the Air Force requires access to a very expensive state-of-the-art technology.

Among the essential characteristics of maintaining airspace control in irregular warfare, we can mention:

- the disputed airspace will be within the coverage of short range air defence systems (*Man-Portable Air-Defence Systems – MANPAD*) or in the range of small weapons; in these areas, it is necessary to have freedom of manoeuvre, with a view to carrying out air activities;
- countering the asymmetric action on a non-linear battlefield is achieved by maintaining control over the airspace around the airbases and the runways, where the predictability of flight activities increases the risk;
- ensuring access to the airspace, both of own military and of civil structures participating in operations. Airspace control structures must be sufficiently flexible to allow for simultaneously striking the opponent, air mobility and use of ISTAR activities.

The irregular warfare environment is, in principle, the choice of the opponent. Thus, it can consist in mountainous areas, jungle or urban areas. For own forces, the environment is characterised by nonlinear areas with dispersed allied forces, operating in air supported small groups, on demand or with ISTAR support, combined with traditional warfare elements.

Air Force role in this context is to provide information superiority, tactical mobility and support in and through fight, precision kinetic activity, including air support for the troops engaged in combat.

The combination of these activities reiterates the idea that irregular warfare operations are based primarily on the air effort and, then, on the air-ground support role.

Thus, the need for the air power involvement by providing information superiority has been proved in the Balkans, Iraq and Afghanistan conflicts, through the advantages provided in the detection of those opponents who intend to vanish, mingling with the local population or hiding in the rugged terrain.

From the perspective of today's changing security and, implicitly, of the irregular warfare environment, information superiority has the primary role in the context of the overall effort, sometimes more important than kinetic air strikes. This category includes surveillance, intelligence actions, reconnaissance and psychological operations. In this respect, the use of unmanned aerial systems has managed to offset the past vulnerability of air power in this area. In addition, space systems play an increasingly prominent role, showing the advantages of altitude, orbit keeping and flight autonomy over areas with deep or denied access. Using unmanned aerial systems in the irregular warfare is so effective that, at present, it ensures continuous monitoring, detects insurgent actions, and then proceeds to provide the necessary information for the initiation of planning stages and carrying out actions.

In Afghanistan current operations, ISTAR systems are also used to measure the effects and losses in combat actions. Thus, one can assess both the operational effects related to mission accomplishment and the collateral effects, with major strategic impact on the population.

Another feature of the use of air power is the tactical mobility and support in and through fight. In this respect, the development of helicopter operations, combined with tactical air transport, have increased the mobility of the land component. It has helped the forces protection and has allowed the small groups of land forces to conduct operations in widely dispersed areas. However, mobility ensures timely delivery of necessary logistics for carrying out wars by all the forces involved in conflict, whether military or civilian. In addition, mobility limits opponents' tactical and strategic initiative by shortening the time for local authorities to respond to the threat.

Employing forces with precision may have a greater impact value in the irregular warfare operations if they are correlated with necessary political and diplomatic measures. As shown above, in the irregular warfare, land forces act usually in small groups, in scattered areas, without having a real support in battle or protection. Thus, their actions in crisis situations rely heavily on air support, most of the cases on call. One has to be aware that, in this type of war, kinetic activities, even those with the most precise weapons, may cause collateral civilian casualties and that any negative impact of an air attack can have a major impact on the population, which could turn against the legitimate force and therefore trigger a negative effect at the strategic level.

In conclusion, I appreciate that the engagement of air power in the new type of conflict must take into account a complex of factors, and the use of specific Air Force capabilities, depending on the desired policy objective, is essential to the overall effort of the operation. In this respect, I consider that Air Force support missions must no longer be regarded as before. Given that, through a comprehensive approach, all the forces involved in conflict are mutually supportive in this respect, the perception according to which specific irregular warfare operations are considered land forces operations and air force has only a supporting role must change. Thus, it becomes compulsory to include the Air Force in the initial planning, at all levels – strategic, operational and tactical – and consequently to fully exploit its capabilities to achieve the goal.

Moreover, using the elements of air power in the irregular warfare ensures the flexibility and initiative of participating forces, which generally are advantages of the opponent. Thus, air force mobility and flexibility represent a real capacity of generating and multiplying the participating forces. It may be observed in this respect that the transformation of the Air Force must be continuous, correlated with both strategic future war vision and the need for transformation of NATO and the European Union. This process must lead to the attainment of such skills through which air forces can operate jointly, expeditionary and can provide and manage the decision superiority. The transformation must therefore seek to meet the requirements imposed by the changing security environment and implicitly by the irregular warfare, according to which the use of air power elements to conduct air strikes is not longer the core mission of air power, characteristic of a known, well organised and structured opponent.

The Romanian Air Force Transformation to Meet the Changing Security Environment and the Irregular Warfare Challenges Implicitly

In the transformation process, the Romanian Air Force cannot ignore the continuous changes in the security environment, which require a prudent approach and proactive effort in order to adapt to the new challenges.

Even though the way nations understand to build their air power shows, first of all, the concern to ensure valid options for the worst-case scenarios as well as the need for the employment in large-scale confrontation, the air power built up mainly remains valid for the military response in low intensity conflicts. What is missing here is for it to be finely tuned to the fight against insurgency realities and the increasing needs to provide enhanced capabilities in support of peace support operations.

The main capabilities of air power that has proved to be operationally effective in low intensity conflicts are not different from those used for making decisions in conventional conflicts, but in an irregular warfare, they will be engaged differently.

Target High Precision Acquisition

Relatively recent results obtained in Iraq and Afghanistan theatres of operations show that in order to achieve notable success in combating terrorist networks, the use of “*surgical*” air strikes is the best option because it has the potential to hit not only physically, but also psychologically the enemy capabilities and determination, by removing/beheading their management.

To enable these strikes that have a strategic effect, it is necessary to develop technologies and techniques for detection and surveillance to avoid the enemy’s possible countermeasures. For example, the mobile phones and credit cards “*signatures*” are frequently used currently to locate insurgents/terrorists and launch air strikes; in this way, we get a tremendous multiplier effect, because the demoralising effect of the insurgent’s lack of alternatives to shelter/hide adds to the striking ability, coupled with impunity.

Satellites that are able to “*see*” in all weather conditions, hundreds of unmanned aircraft that constantly monitor all moves on the ground, radars, electrono-optical and acoustical sensors, all these provide necessary data to carry out attacks with high precision weapons and create to insurgents a feeling of omnipresence because of the monitoring from the sky, putting additional stress on them and further restricting their spectrum of options.

Use of Information

The most important aspect of the information warfare in low intensity conflicts has proved to be the ability to conduct the network-centric warfare so as to achieve the cyclical closure of the own OODA loop (Observation – Orientation – Decision – Action), in a higher tempo than the opponent in order to win quickly and to permanently maintain the initiative.

The disorganisation of the opponent’s decision-making process has proved to be a valuable tool for obtaining and maintaining information supremacy. In the circumstances of the current development of the information gathering and processing systems, in a classic conflict, the interference within the opponent’s decision loop can be done relatively easily by the air forces, which are prepared (equipped and trained) to conduct this type of actions aimed at the opponent moral component, but in irregular warfare conditions, the situation is significantly complicated.

Achieving a clear operational picture that is continuous in time and applying a significant firepower with accuracy are extremely difficult tasks when the opponent's deployed forces are significantly integrated in society, in particular because Air Force does not normally have infinite capacity to collect information, cannot operate anywhere, anytime and in any case due to the increased threat posed by ground-based air defence systems and it cannot apply indiscriminate strikes in residential areas.

Currently, the scientific community's efforts are directed towards the development of research systems equipped with sensitive sensors highly developed in order to make possible the acquisition and discrimination of single targets in motion, as well as the development of information processing/fusion systems able to incorporate a three-dimensional image of the urban combat environment, with possibilities of decomposing it on successive levels of fusion, allowing both the awareness and understanding of the operational situation.

However, it is true that the world advanced air forces ask themselves more and more seriously about protecting their systems of gathering, processing and distributing information from the asymmetric attacks. The more commercial hardware and software technology is included in these systems, with the purpose of reducing costs and shortening the time needed to develop and test them, the more these systems become more exposed and vulnerable to cyber-attacks (and not only).

Opportunity Target Acquisition

Currently, Afghanistan anti-terrorist coalition operations can be described as high-intensity counterinsurgency operations in which air force power has a well defined role. The local (in)security conditions combined with the difficult terrain and the extreme climate make the tactical air transport essential for deployment and resupply, and data collection with airborne systems is essential in order to facilitate the distribution of specific targets at the joint level. The difficult terrain and the communications infrastructure undergoing a critical condition make extremely difficult the mobility needed for mobile groups/targets engagement, particularly for land forces, which must meet the range of action requirements (in comparison with air force capabilities). At the same time, in the virtually unlimited range of air attack means, coupled with the sensors detection and discrimination, airborne capability makes it possible for an appropriate response (basically, 10 minutes after the call/order, within the tactical aircraft action range) to occur in any hot spot of the theatre of operations.

For these reasons, unlike conventional conflicts, where the role assigned to aviation is limited mainly to its meaning of strategic weapon (air defence and strategic attack), in the irregular warfare, this role is assigned equally virtually to all air operations types of missions and effects: deterrence, protection of ground troops, close air support, interdiction and destruction of enemy groups/cells. This can be done using both special dedicated resources and ad hoc irregular warfare tailored tools, exploiting the lessons learned from the ongoing conflict (e.g. sending images or information from the targets TV sighting containers and electronic countermeasures at data fusion centres, almost in real time, with a view to announcing C2 echelons about the occurrence on the trajectory of some opportunity targets that cannot be tackled in the current mission for whatever reasons – the impossibility of priority mission abandonment, inadequate weapons, limited fuel etc.).

A general conclusion reached by all air forces that have been engaged in low intensity conflicts in the past four decades is that no effort should be focused on limited objectives and directions, but the concept of carrying out the operation must be an integrated one. In recent years, at the same time with the theoretical, doctrinal and technological developments that have substantiated the concept of network-based warfare, the possibility of achieving a capability that is integrated into a joint network has occurred, which would synergistically work at the *joint* level.

As the nature of insurgency operations is closely linked to the operation in urban environment, for reasons of efficiency (here there are concentrated the majority of objectives that can be used as targets for the insurgents) and, at the same time, of protection, it has become very clear that only a joint level effort, aimed at exploiting all opportunities for gathering information (frequency, panchromatic, infrared, seismic, acoustic and magnetic etc.) can lead to their redundancy, capable of enabling efficient fusion and decision-making process – to be able to hit a target, first it is needed to identify it against the background of the radiation and then engage it at the appropriate moment and position. For this, having the proper technology is only part of the solution. Appropriate use of equipment in line with the strategy has begun to draw attention only after certain failures, which have perhaps demonstrated that the most important is to understand your opponent – for this, appropriate information is only an intermediate instrument.

Counterinsurgency Dedicated Means

Since the eighth decade of last century, the Air Force military analysts who have experienced the phenomenon of insurgency/low intensity conflicts have drawn attention to the fact that, for the air operations specific to this type of conflict, ultra-sophisticated supersonic aircraft that are designed for conventional warfare

are not the most appropriate tools to accomplish specific missions against guerrillas, especially in urban areas and jungles. The main limitation of “classical” ground attack aircraft in close air support missions is given by the need to attack very small mobile targets, from lower altitudes (below 500 meters) and with low speed (around 200 km/h) in order to allow positive visual identification of the targets attacked. Beyond these limits, it is considered that the effectiveness of surveillance/visual recognition depreciates at a highly accelerated rate and, in many cases, the “target” is a single soldier or a small pedestrian team.

Even if, within this speed/altitude range, the armed (not necessarily assault/anti armour) helicopters are the best to use, and their usefulness cannot be denied for this type of mission, their vulnerability (due to the combination of dynamic parameters and dimensions) raises special problems for their use in these roles. As a result, the aircraft designated for this role are generally PC-7/PC-21/Texan II/Super-Tucano/KT-1 class turboprops, which, although attain speeds that are at the higher limit of the prescribed range, have an endurance and a range higher than the ones of helicopters and, at the same time, more reduced (both radar and visual) exposure indices.

This does not mean that, at the upper limit of the spectrum of aircraft that are considered for such missions one cannot find aircraft from the class *Light Combat Aircraft – LCA*, or that helicopters are completely out of the equation.

In fact, helicopters, both armed and those for a general purpose, are to be used extensively in operations, in limited theatres of conflict, for tactical air transport, medical evacuation (MEDEVAC), search and rescue (SAR, including combat search and rescue, CSAR) and especially to protect ground convoys.

Air power can be employed in large operations, but also in actions with small forces, areas in which terrorist elements or their supporters are located, counterterrorist actions, air patrols, neutralisation and as dedicated support of special operations.

In its efforts to strengthen the capacities of responding to new threats, Romania, as a member of NATO and the European Union, will have to achieve a reconfiguration of its air power in order to perform new types of missions within remotely conducted wars and operations, in peacetime, during crisis and at war, to successfully deal with the future challenges of the regional and global security environment.



ROMANIAN ARMED FORCES CIS/C4ISR CAPABILITIES DEVELOPMENT STRATEGY UP TO 2020

Colonel BEng Ovidiu Ionel TĂRPESCU
Colonel BEng Dr Costică POSTOLACHE

Technical, technological and conceptual progress within the IT&C field has brought about important changes at geostrategic level, all military aspects included.

This article presents the need for a Strategic CIS/C4ISR Concept for the Romanian Armed Forces 2020, as well as the goals and the objectives to be achieved within this period of time.

At the basis of this Strategic Concept there are: Network-Enabled Capabilities (NEC) and NATO Network-Enabled Capabilities (NNEC) concepts; New Armed Forces C2 Concept; increasing complexity of military mission, considering that strategic, operational, and tactical levels merge, operations serve a mixture of military and civil objectives and are carried out by coalitions of the willing.

Keywords: *military alliances; communication systems; technological leap; sensors network; battlefield*

Rapid developments in technology, in general, and *information and communications technology (ICT)*, in particular, and globalisation of information have caused the current geostrategic situation to become increasingly complex in terms of actors, power relations and their modes of expression, and this trend is increasing in the coming decade.

Global communications accelerate and expand the acknowledgement of events, issues and achievements in all areas of the world. In the Information Age, in the forefront stands the use of information technology to build on the huge potential of the amazing speed of generation, transmission and processing data. These, in turn, revolutionise the way in which states, institutions and people interact, changing radically the traditional principles of management and organisation.

Clearly, the technology of the Information Age and modern management concepts exert a great influence on the armed forces in terms of organising,

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equipping, training, fighting and operation, protection and their participation in conflict resolution.

Influences are obvious as the complexity of military action has increased, military purposes have interwoven with civilian ones, military alliances, partners in international “*coalition of the willing*” as well as now governmental structures have involved in military actions, and the classic strategic, operational and tactical levels have merged in a single operation.

To meet these new challenges and the mostly asymmetrical and unconventional nature of security threats in the contemporary environment, military systems are found in a deep process of transformation: they change the doctrines, increase structures suppleness and forces missions, readjust themselves continuously to threats, increase the technological complexity of systems that are equipped etc.

Future military force must be deployable (expeditionary), with joint capabilities that enable it to conduct a full spectrum of operations, fully interoperable with coalition forces to which it belongs, but also with civilian authorities and non-governmental organisations. This force must be easily reconfigurable, have self-maintenance capabilities and be able to operate in an environment in which all technical systems, decision centres and impact vectors are integrated. Creating this integrated environment and protecting it against acts of information and electronic warfare and against cyber attacks of the enemy is the responsibility of communication and information specialists.

Transformations of CIS

Communications and Information Systems (CIS) in the Romanian Armed Forces have evolved in accordance with the military doctrine, concepts of command and control, the technological level and economic opportunities. With great material but, especially, human efforts, the Romanian Armed Forces are currently able to develop a National Military Communications Network that includes both a fixed infrastructure and deployable capabilities within the national territory or in the theatres of operations. Applications and information services provided within the existing networks provide a minimum amount of services needed for both current activities and the conduct of exercises and missions in the theatres of operations.

Despite all the efforts made to ensure the infrastructure and communications and information services in the Romanian Armed Forces, there is a lag compared with the other members of the Alliance, in terms of both standardisation and equipment,

mainly because of the limited resources available for development and modernisation. It is therefore necessary to adopt a strategy based on the technological leap and the achievement of the network and information infrastructure strictly necessary to reports and decision-making at strategic, operational and tactical levels, taking into account the interactions between the system of defence, public order and national security with maximum performance and affordable costs.

The need for training and very rapid deployment, strict requirements for interoperability with partners and cooperation with international organisations in areas of responsibility on the grounds of the diversification of direct and indirect threats are particular challenges for communications and information systems, their role being to facilitate, at the maximum level possible, the integration of all actors and military actions, while ensuring C4ISR capabilities necessary for command and control, planning and waging warfare.

At international level, these challenges have been addressed through a new revolutionary concept, known under different names such as *Network-Centric Warfare – NCW*, *Network-Enabled Capabilities – NEC*, depending on the country or organisation that has developed or implemented the concept, translated into the Romanian military and scientific environment as *Războiul bazat pe rețea – RBR*.

RBR uses the opportunities of the information age for the deployment of military assets and employs an appropriate network and information infrastructure to ensure the access to high quality information services for all participants. In principle, it includes: a network and information infrastructure (NII) to provide information, including processing, storage, transfer and protection for joint or combined forces; a network of sensors to ensure the information needed for any type of mission; this includes both classical sensors, such as radar, as well as modern sensors [(mini) UAVs or satellites], integrated with NII; a component of the effectors, interconnected through the NII, which provides the link between weapons systems, staffs, commanders and troops deployed in order to achieve the desired effect on targets.

All three components are in close interconnection, their main elements sometimes even overlapping, as illustrated in *figure 1*.

The essence of this concept is to increase the combat effectiveness of a process based on continuous information exchange between all actors – the command control system, data collection, surveillance, reconnaissance and targeting system, information exchange facilitated by a comprehensive, stable and protected network communications infrastructure.

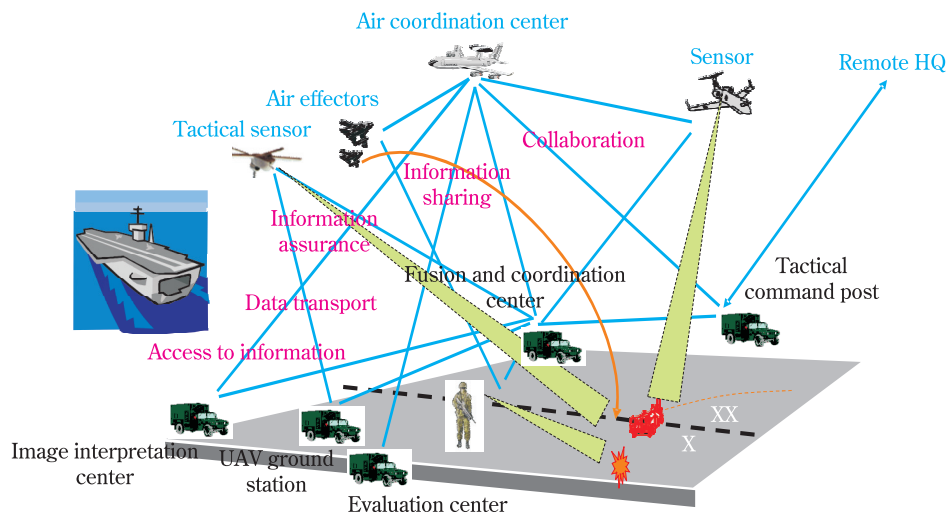


Figure 1: The interaction between RBR components

This process of ensuring the effectiveness of the mission by collecting information from all sources on the battlefield, perform their integration into the common operational picture and timely exchange for the synchronisation of military actions is presented schematically in figure 2.

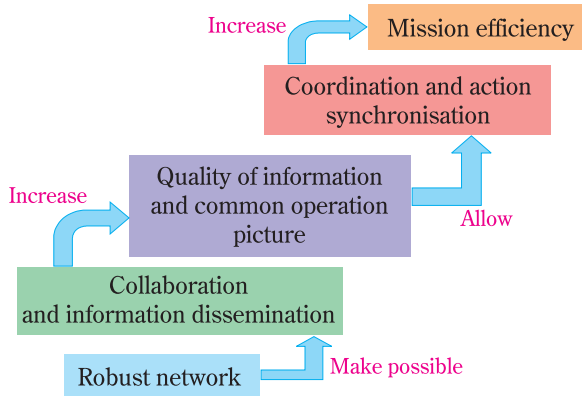


Figure 2: RBR concept basic processes

Basics of development strategy for CIS/C4ISR capabilities up to 2020

As we have shown above, up to now the development of communications and information systems has been based on operational needs, and the outcome is represented by communication networks, command control systems, networks and information services. Although the C4I2SR Romanian Armed Forces concept was developed in 2005, the approach has not been finalised by the approval of the governing structures of Defence, and thus it has not become a programmatic document, a reference one to political-military leadership, being only a comprehensive document to guide communications and information specialists.

For the first time, it is an attempt to develop military systems in C4ISR class having at the basis a *strategic* concept, which takes into account political-military

national and international circumstances and a set of factors, such as: the new command control concept for the forces structure; the analysis of the accomplishment level of the force objectives assumed within NATO; the new NATO strategic concept and vision for NATO C3 (consultation, command and control); lessons learned from the theatres of operations; recent appearance in national legislation of a stipulation relating to critical infrastructure protection, including those in the area of information and communications technology, or cyber defence; temporary limitation, caused by the global financial and economic crisis, of the financial resources allocated to operation and especially to the development of military communications and information systems.

In this context, we consider as being appropriate to elaborate a *strategy* for the development of CIS/C4ISR military capabilities for 2020, which is intended to be a programmatic guide, a reference document for the definition, planning, implementation and development of the CIS/C4ISR capabilities needed for consulting, supporting political-military decisions and ensuring command and control force structure for peacetime, crisis or war missions. The *strategy* should also be a guide for transforming the concepts, specialised structures and C4ISR capabilities in the next decade.

The *objectives* of this document are:

- to provide a comprehensive guide, in the long term, to develop national structures, concepts and C4ISR capabilities;
- to constitute a framework document, on which further conceptual work is carried out;
- to be a handy tool for military-political factors in adapting C2 concepts and decision-making processes at the strategic level in terms of equipping, training and conducting military actions;
- to define development and implementation projects of C4ISR systems in the medium term (2020);
- to introduce the main directions in order to elaborate the concept of developing and implementing such systems as C4ISR in the Romanian Armed Forces.

In this context, the *Strategy* states that the purpose of the CIS/C4ISR capabilities within the Romanian Armed Forces is to provide technological support and information for:

- political-military consultations at national and NATO level, as an information exchange process between structures with responsibilities in order to define response options, harmonise positions and make decisions;

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- development, implementation and interconnection of integrated command, control, communications, computers, intelligence, surveillance and reconnaissance systems, with the appropriate level of performance, interoperability and efficiency, in order to allow force structure to properly assess the situation, to plan and execute missions at all levels (tactical, operational and strategic);
 - protection of systems and information by implementing information security concepts, including cyber defence;
 - planning and execution of missions that require cooperation with the structures of the Defence, Public Order and National Security System and civilian structures, in situations of crisis or natural disaster.
- Schematically, the areas and the way they interact are presented in *figure 3*.

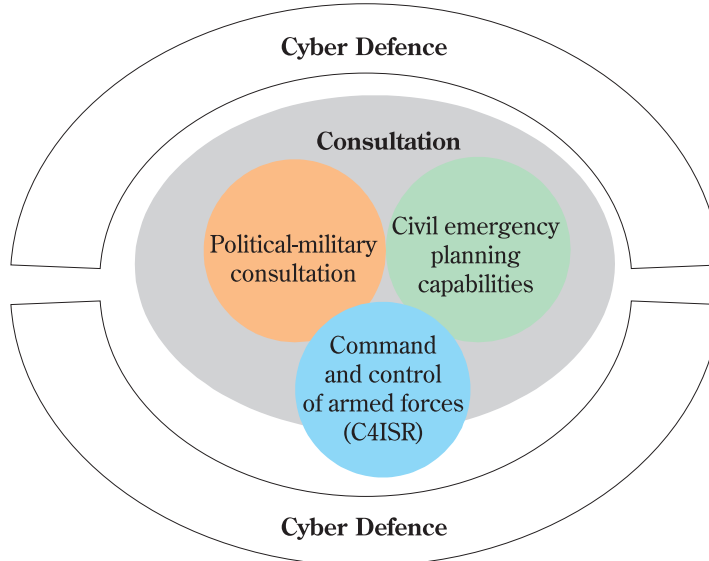


Figure 3: Processes which must be supported by communications and information systems

The *Strategy* is structured in two phases, as follows:

- first stage, in the medium term (2012 – 2016), for which strategic objectives are defined;
- second stage, in the long term (2017-2020), for which the guidelines at strategic level are identified.

This temporal structuring is consistent with the NATO Board approach for C3 (*NC3B – NATO Command, Control and Consultation Board*), thus ensuring the consistency of approach and the possibility of simultaneous and comparative assessment.

Medium-term *strategic objectives* are:

- creating an information exchange environment in which data and services are visible, accessible, usable and protected, with emphasis on deployable C4ISR capabilities;
- creating an information and networking infrastructure to be a suitable environment for information exchange and consultation, decision-making, command and control processes;
- protecting both information and networking infrastructure as well as the information processed, handled or stored, using procedures and appropriate measures, including detection and response capabilities to security incidents as CERT (Computer Emergency Response Team);
- establishing/defining a mechanism for governance (coordination) of the whole process, particularly with regard to the process of decision-making on the CIS/C4ISR, monitoring performance and results of investment in this area, coordination and monitoring the organisational transformation processes (organisational culture, information management, risk management, training, programming, budgeting etc.).

The *principles* underpinning this strategy are:

- optimising the use of investments already made in CIS/C4ISR and improving efficiency of the resources to be allocated;
- integrating all CIS resources available at MoD level and ensuring interoperability at NATO level, as multiplier of CIS capabilities;
- using, where possible, solutions that have demonstrated the viability and development, particularly, of: deployable capabilities in support of troops engaged in the theatres of operations; deployable capabilities for NATO nominated forces; network and information infrastructure capabilities that support operations and deployed/deployable structures; decision support capabilities at a political-military level; cyber defence capabilities;
- improving the information management and information exchange processes at national and NATO level;
- developing, with our own forces, the maintenance capabilities of the communications and information systems, according to the *Romanian Armed Forces Logistics Strategy*;
- use the financial planning based on capabilities;
- interoperability between communications and information services and systems with those of NATO and EU;

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- use of NEC as a reference concept in defining the CIS systems transformation and in defining the force objectives in the area of the network enabled capabilities as agents of implementation.

*

The changes in communications technology and information technology and those determined by the new international security environment have led to profound changes in the military area.

One of the key elements of the transformations to which we are witnesses and subjects is the integration, through information and network infrastructure, of key factors in conducting a mission: decision-makers, sensors and effectors. Transformation is not a process that operates following the on/off principle, but an incremental process that must be planned, monitored and consistently adjusted.

The consistent transformation of the existing systems into solutions to meet the new challenges is more easily managed through a strategy of development of these capabilities in a predictable period – 2020.

The Communications and Information Directorate draws up the C4ISR capabilities development strategy, aiming to inform not only political and military decision-makers and provide them with a decision support tool but also the headquarters and combat units to provide them with an insight into the future of training, preparing and conducting missions.



TELECOMMUNICATIONS-SPECIFIC STRATEGIES AND POLICIES IN THE EUROPEAN UNION

Colonel Dr Ionel CIOBANU
Colonel Sorin Silviu BĂLĂȘESCU

Fixed telephony subscribers can choose to keep their phone number if they switch operators even if they remain in the same location. The portability of the so-called non-geographical numbers must be possible in the case of changing both the operator and the address. The author points out that number portability is available to all mobile service subscribers.

A domain name usually consists in a basic field and in a few secondary level domains. The Internet operating system consists in separate names and addresses. The domain names are generally permanent, and a host, including the associated services, will keep the same name even if it is attached to different networks. On the other hand, the IP address must indicate the connection point and that is why it can be temporary.

Keywords: *frequency plans; consumers; EU; competition; electronic communications*

The European Union Policy on telecommunications aims to develop a knowledge-based society that allows everyone to have access to information, to interact with others, to search for services and products and to have access to online government services, education and health services, thus achieving the maximum benefit for users.

The objectives of the new regulatory framework are to encourage electronic communications market competition by removing barriers to it, providing the necessary legal conditions for supporting networks investments, developing an indiscriminate behaviour and openness and transparency of operations, improving internal market and defending users' fundamental interests that cannot be guaranteed by market forces.

The regulatory framework includes the legal rules applicable in all EU member states¹. The regulations in the telecommunications field are asymmetric and specific to certain sectors, where the operators' rights and obligations have been previously defined in the legislation.

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¹ In *Manualul Afacerilor Externe*, Institutul European din România, September 2005, Jukka Kanervisto, *Politica UE în domeniul telecomunicațiilor*, chapter 6, p. 85.

Full liberalisation of telecommunications in the EU came into force in early 1998. Five years later, in July 2003, the regulatory framework was simplified by merging the six main directives of the *acquis* from 1998. In addition to simplifying the legal structure, to develop the new framework, the emphasis was placed on communications convergence, technology neutrality and flexibility to market changes. The main aspects of the *acquis* are aimed at the following:

Promoting competition – to achieve economic efficiency in the interest of users and society, this is one of the main objectives of the EU regulatory framework for electronic communications. National Regulatory Authorities (NRA) play a major role, together with national competition authorities. Promoting competition is one of the primary objectives for the NRA. The new framework contains incentives for competition, which, together with previous regulations, enable the transition from monopoly to competitive environment.

For rights and obligations, individual regulatory decisions remain necessary, in most cases, namely: rights of way, radio spectrum use rights, right to use numbers, obligations related to significant market power and to universal service provision.

Member states may impose two types of levies on providers of electronic communications networks or services, administrative charges and usage fees². Administrative charges are intended to cover the costs related to national regulatory authorities for managing the general authorisation system, allocating rights of use, regulating market competition and providing universal service. Usage fees may be imposed for rights to use radio frequencies, numbers and rights of way. These fees ensure optimal use of these resources and should be proportionate to this purpose.

Under the new authorisation directive, it will not be possible for regulatory authorities to require operators to provide proof of compliance with the general conditions for approval before starting their business. In principle, regulatory authorities may require proof of compliance only on a case by case basis after receiving a complaint or if they have other reasons to believe that these conditions are not met.

When a national regulatory authority considers that a service provider or network has breached a condition, it must notify the provider in question and give it a month to resolve the problem or explain why it disagrees with the assessment of the national regulatory authority. If the national regulatory authority does not consider the provider's answer satisfactory, a financial or other penalty may be imposed.

² *Ibid*, p. 87.

All relevant information on rights, conditions, procedures, fees and decisions related to the general authorisation and rights of use is published in an easily accessible way for all the involved parties.

To facilitate the task of companies to install cables, masts or antennas, national regulatory authorities must make reasonable efforts to ensure accessibility to all relevant information (rules, procedures, fees etc.) through a friendly interface, for example by creating a website with links to the information held at local levels.

When a member state intends to make changes to the rights, obligations or procedures applicable to providers of electronic communications networks and services, they are obliged to consult the parties involved before adopting any changes. The public consultations should give interested parties at least four weeks for expressing opinions except in exceptional circumstances.

Interconnection is an essential element in a multi-network environment. This allows network users to communicate with other network users or to have access to services provided for other networks. In a liberalised market, terms and conditions for interconnection to the dominant network operators are essential for a successful market openness. All operators of public communications networks in the EU have both the right and obligation to negotiate interconnection with each other. In case of dispute, the national regulatory authority may intervene.

Access is a generic concept that covers any situation where a party is granted the right to use the other party facilities exclusively or shared. As defined in the Access Directive, interconnection is a special form of access.

Interoperability of services: interconnection does not guarantee interoperability of services provided in these networks. Interoperability requires common standards and protocols or the use of a conversion function that can make the transition between different systems.

EU member states should encourage the use of standards as means of ensuring the interoperability of services and freedom of choice for users.

The Commission published in the *Official Journal of the European Union (OJ)* a list of standards or specifications³ that serve as the basis for encouraging the harmonised provision of electronic communications networks and services and related facilities and services.

In the context of the liberalisation of voice telephony in order to complete the full liberalisation of the telecommunications sector, it was decided that a safety net was maintained to provide the continuous availability for users of a set of basic

³ *Ibid*, p. 89.

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telecommunications services at a given quality and at a certain price, even if the market would not provide it. This set of basic services was called the “*universal service*”. The universal service incorporates the following rights: the public telephone network connection at a fixed location, access to publicly available telephone services, service information availability, public pay telephones availability, facilities for disabled users and those with special social needs.

There are requirements/obligations in force, but NRA can establish new ones on the quality, availability or affordability of services, free 112 emergency services and provision of directory inquiry services.

Ensuring the provision of a defined minimum set of services for all end users at an affordable price has its costs. The Universal Service Directive includes provisions that allow designated universal service providers to be compensated for their specific net cost, when it is shown that universal service obligations can be provided only at a loss or at a net cost outside normal commercial standards.

European Commission policy development aims at developing, together with industry players (users, operators, service providers, national regulatory authorities and member states), a convergence market (including telecommunications, radio and digital television and next generation networks) and a regulatory environment that is conducive to innovation, investment and competition, thus providing all users with a set of high quality communications services at fair prices.

Horizontal provisions regarding consumer protection apply to all services of general interest, including the telecommunications sector. The relevant legislation includes the Unfair Terms in the Consumer Contracts Directive, the Distance Contracts Directive and the Misleading Advertising Directive.

The European Commission publishes regular updates of the inventory of Community rules on protection of consumers and their health, provides basic information on mandatory and non-compulsory measures relating to consumer protection.

Specific provisions are defined in the Universal Service Directive and tariff transparency: service quality, consultation with parties involved, resolution of disputes out of courts, alternative dispute resolution.

Directive 2002/58/EC concerning the processing of personal data and privacy in electronic communications networks includes provisions for security services, confidentiality of communications, access to information stored on terminal equipment, processing of traffic and location data, caller identification, public service inquiry and unsolicited commercial communications.

The Directive covers the following aspects: security of networks and services, communications confidentiality, spyware and cookies technologies, traffic data, location data, public subscriber services, unsolicited commercial communications, calling line identification, nuisance calls, emergency calls and automatic call forwarding⁴.

For EU member states, the time required to transpose the Directives into national law is defined in the Directive. With regard to the acceding countries, the directives will come into force upon their accession to the EU.

National regulations focus on primary and secondary use of normative acts. Adapting to the changing environment of regulations is difficult to respect the timetable for legislative changes. If the law only covers primary and secondary legislation and mandates ministries to approve, adapting to the changing environment is much more flexible.

The status of EU member state guarantees:

- that each of the tasks assigned to the National Regulatory Authority is satisfied by a competent body;
- the independence of NRA, which has a distinct legal status and functional independence from all the organisations that provide networking, electronic communications equipment or services;
- in case of a control on an operator, it shall ensure effective structural separation of the regulatory function from activities associated with ownership or control.

The *National Regulatory Authority (NRA)* promotes competition in the provision of network services and facilities related to electronic communications, ensuring that there is no distortion or restriction of competition in electronic communications and innovations, by encouraging efficient use and management of radio frequencies and numbering resources.

NRA cooperates with the national competition authority and exchange information necessary for the implementation of directives.

Fixed telephone subscribers have the possibility to keep their phone number if they move from one operator to another, even if they remain in the same location. The so-called non-geographic number portability should be possible in the case of both switching to other operator and changing the address. The number portability has already been made available to all subscribers of mobile services.

A domain name usually consists of a top-level domain and several lower level domains.

⁴ *Ibid*, p. 91.

The Internet scheme consists of separated names and addresses. Domain names are generally permanent and a host, including associated services, will keep the same name even if it is attached to a different network. On the other hand, the IP address must reflect the point of attachment and may therefore be temporary.

IP addresses are assigned at the regional level to larger networks operators by a Regional Internet Registry (RIR), based on the evidence of their necessity.

End users purchase addresses from their chosen supplier.

A Framework Directive requires EU member states to coordinate their positions on issues relating to numbering, naming and addressing, to ensure global interoperability of services. In addition to this provision, the legislation does not impose any requirements on Internet names and addresses, as current management practices were considered to be adequate, taking into account the objectives of the framework⁵.

Radio spectrum – in the national frequency plans, spectrum blocks are allocated for various uses, such as military communications, police and emergency communications, radio and television broadcasting, mobile communications, satellite communications, navigation services etc. National frequency plans depend largely on a comprehensive international coordination to minimise the risk of harmful interference in border areas, to enable cross-border marketing of products using regulated or unregulated spectrum and to facilitate cross-border provision of services based on spectrum usage.

Spectrum should be allocated on the principle of *“first come, first served”*. However, if the regulator expects demand will exceed supply in a given block of spectrum, it may be necessary to determine the beginning of a limited number of rights of usage. In these cases, public consultation is required prior to obtaining the views of users and consumers on the proposed limit. Moreover, the selection criteria used to allocate a limited number of rights of usage must be objective, transparent, non-discriminatory and proportionate.

Communications network providers must install infrastructure elements, such as wires, masts, switches etc. For this, they usually need rights to install facilities. When public authorities own land or buildings, they are obliged to consider any request for installation of facilities on the basis of transparent, discriminatory and public procedures.

Digging up roads to create ducts usually generates inconvenience for the public, and masts for cables or antennas can distort the landscape. There may be reasons for environmental protection, public health that determine the authorities to limit

⁵ *Ibid*, p. 94.

the rights to install facilities. If, for these reasons, companies are left without the possibility of installing infrastructure, member states may impose obligations on operators who already have facilities installed for the purposes of sharing with newcomers such facilities or the locations where facilities are installed.

No special requirements are imposed in regard to financing NRA. They can be financed from the state budget, they may finance themselves or there can be a combination of the two situations.

The transposition of directives into national law is only a part of the implementation. Regulations must be applied in the telecommunications network. Many of these regulations require major changes in the network, needing time for planning and implementation (e.g. implementation of (pre)selection and number portability, operators). New services should be provided at the entry into force of new regulations. Planning and implementation of change must begin well before the deadline.

To regulate the market, the regulatory authority needs more information about the market itself, operators network technology, practical numbering arrangements etc. Implementation of the regulations has a direct impact on the network and can be discussed in industry working groups, which are forums for discussion, without any power. These working groups are chaired by the regulator. They can provide free expertise to the regulatory authority. Another advantage is that players who take part in working groups become involved in the implementation of regulations.



NETWORK-CENTRIC WARFARE AND NETWORK-ENABLED CAPABILITY IMPLICATIONS FOR C4ISR-TYPE INFORMATION NETWORKS IN THE ROMANIAN ARMED FORCES

Lieutenant General (r.) Dr Cristea DUMITRU

The past two decades have marked the humankind evolution towards the Information Age, a new stage of societal development in which modern society is affected, among other factors, by explosive technological changes. Within this context, technology represents the main changing drive. To be more specific, small innovations that have appeared in the information technology and communications are considered to be responsible for the global transformations in the structure of economy, politics or culture. This assertion also extends its validity over the military phenomenon, which is just another human behaviour. The large-scale use of information technology and communications has led to a cybernetic battlefield and to changes in the philosophy of waging war, involving the emergence of new concepts that better describe the new reality: Network Centric Warfare and Network Enabled Capabilities.

Keywords: *typology of war; operational structures; NNEC; data collection; C4ISR*

The physiognomy of the conflict at the end of the 20th century and the beginning of the 21st century has radically changed. The complex set of factors that personalise conflicts include: particular political-economic and strategic insecurity situations, new political and strategic goals, new objectives, specific action forces and means, a different conception and intensity, a new attitude against the opponent, different action spaces, a comprehensive variety of dominant action types, and ever more sophisticated and unexpected ways of violent manifestations. The world of these conflicts is a world of asymmetric confrontations.

Out of the main features of the current and future military conflicts it is worth mentioning the following¹: the complex causality that results from the existing incompatibilities between political dictatorial or autocratic systems and democratic ones; the distinct mark left on the new military conflicts by the immense disparity between the rich

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¹ Cf. T. Frunzeti, M. Mureşan, Gh. Văduva, *Război și haos*, Editura Centrului Tehnic-Editorial al Armatei, Bucureşti, 2009, pp. 27-29.

world and the poor world, between the high-tech civilisation and the traditional one, diversified, having ancestral values, customs and traditions; the technological effect given by the different technological development; different conflict intensity, from the extreme violence of the terrorist attacks to containment, domination or imposition of a certain conduct; the continuous chemical, biological, radiological and nuclear threat; dissymmetry and asymmetry; the ubiquity of the action – reaction binomial; prevention and the primitive or repressive character; the new terrorism – antiterrorism binomial implication; the mosaic character; unpredictability.

These features could be supplemented with other ones like flexibility and confusion, the indirect character, political and religious extremism etc.

Warfare typology is extremely diverse, but when we refer to the conflict dimension we should only take into account three types of warfare, namely the asymmetric warfare, the cognitive warfare and the high-tech and information-based warfare (network-centric warfare).

The essential principles of the Information Age warfare are: information superiority; common access to a high-quality information system; dynamic self-synchronisation – to increase the freedom of small operational structures; dispersed forces and discontinuous operations; flexible forces – easy transition from massing forces approach to the effects-based approach; the widespread use of sensors ensures a superior level of information; compressed levels of warfare and operations that drive preponderantly to joint operations; high speed of command procedures; full spectrum dominance – the ability of forces, operating unilaterally or in combination with multinational partners, to defeat any adversary and control any situation across the full range of military operations².

Information operations represent the integrated use of electronic warfare actions, psychological operations, deception, operations security, command and control operations, “*information supremacy*” operations, psychological actions, hackers’ actions, economic information actions and virtual environment actions³:

- Command and control operations – neutralise the command and the command-control systems of the adversary. These operations integrate the psychological operations, deception, operations security, electronic warfare and physical destruction actions;
- “*Information supremacy*” operations – projection, protection, and annihilation of the systems that contain enough information to dominate a conflict environment;

² Cf *Joint Vision 2020*, Department of Defence, Washington, DC, 2000, p. 4.

³ Cf S. Topor, *Războiul informațional*, Editura Universității Naționale de Apărare, București, 2005, pp. 25-27.

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- Electronic operations – equipment employed to reconnoitre, neutralise, and destroy the electronic systems that generate or convey information, as well as cryptographic techniques;
- Psychological operations – information is used to modify the attitudes or options of partners, neutrals or enemies;
- Hackers' actions (software piracy) – computers and communications networks are the target of the active and passive attacks with disruptive and destructive software;
- Economic information actions – blocking or acquiring information in order to gain economic supremacy;
- Virtual combat environment actions – accumulation point of fundamental and technological research, war games and futuristic scenarios.

Offensive information operations are intended to neutralise the information systems and actions of the adversaries, while the defensive information operations are designed to defend the own elements against the similar offensive operations of the opponents.

One of the modern ways to conduct combat operations is the *Network-Centric Warfare (NCW)*. It is a relatively new concept of technological and information vanguard, with global scope, easy to be accessed only by entities provided with competitive information and analysis systems, up-to-date advanced technologies, modern information technology and communications, and the needed technical support structures and software.

From the perspective of conflict dimension, network-centric warfare could be perceived from at least three points of view:

- *theatre warfare* representing a confrontation between two or more armed entities, in a well defined theatre of operations as far as the geographical area and philosophy of the real actions are concerned;
- *war extended* in other areas than those specific to the armed combat, like cyberspace, media, economic and financial ones;
- *war in the theatre of concepts*, which has as goal the knowledge dominance, with a scientific foundation of some systems of action and reaction allowing the intelligent and efficient use of existing forces and means, together with the innovation of new ones, more competitive, and more difficult to be identified and discovered.

The concept and employment of NCW belong to the nations that possess high level technology, and developed information technology and communications, especially the United States of America, the only nation that successfully used

it in a direct military confrontation, in Iraq. The NCW concept provides six essential capabilities⁴:

- real and virtual networks equipped with C4ISR (similar) systems;
- relational databases;
- rapid, flexible, expeditionary and interoperable forces;
- interconnected weapon systems;
- projection of forces and means;
- networked logistics.

Even during the war in Iraq NCW proved its effectiveness, it still has some limits in the post-war operations. Under these circumstances, although NCW is likely to dominate the battle space (generally, the armed confrontations), it is not available to anyone. According to all probabilities, NCW will succeed, at least for the first two decades of the 21st century, in accomplishing all the functions it was created for, only in a combat environment with a high level of certainty dynamic, thus in a disproportioned warfare. NCW is not a chaotic warfare, but one that has a rapid development and a predictable end, and that could produce chaos, since the disproportion brings quite serious problems in the immediate dynamic of the political, economic, social, information, and military situation.

Employment of the C4ISR Systems in the New Operational Concepts – Network-Centric Warfare and NATO Network Enabled Capability

The concept of NCW describes the combination of emerging tactics, techniques and procedures that a networked force can employ to create a decisive warfighting advantage⁵. Although this concept is strictly related to the reality of the US military forces, its evolution – *NATO Network Enabled Capability (NEC)* – has extended the theory over the entire North Atlantic Treaty Organisation. NEC is the cognitive and technical ability of the Alliance to conduct different components of the operational environment, from the strategic level, including NATO Command, to below at the tactical level, using a unique integrated network information infrastructure⁶.

The purpose of the employment of new concepts like NCW and NATO NEC in planning, organisation and warfighting is to provide all leaders from every subordinated level with near real time information necessary to understand

⁴ Cf T. Frunzeti et al, *Război și haos, op. cit.* pp. 35-36.

⁵ Cf J.J. Garstka, *Network Centric Warfare Offers Warfighting Advantage*, in Signal Magazine, USA, May 2003.

⁶ *NNEC Vision and Concept*, MCM-0032-2006, Allied Command Transformation, Norfolk, Virginia, USA, 2006, p. 2.

the tactical situation and to act according to commander's intent. This increased capacity of command generates new operational challenges. While subordinates have broader access to the tactical situation, high-level commanders have access to very detailed tactical plans. The high-level commanders should resist the temptation to conduct minor military actions at subordinated level, because their intention could diminish the benefits of the modern information systems and the situational awareness they support. As a result, it is necessary to promote strong leaders at every level, and to build troops' confidence and cohesion on C4ISR-type complex and combined systems and equipments, brought in practice by realistic training, drills and field exercises.

A robust force strongly connected in network improves the information exchange, cooperation, quality of information, and the situational awareness that generates a significant growth of the mission efficiency. It is practically proved that information networks have a positive impact on the combat power, synchronisation of the staff personnel and decision-makers on the battlefield, casualties cut, amplification of the force agility and operational tempo.

The new sensors, extended connectivity and new information systems substantially concur to the efficiency of the troops' combat actions. Information distribution has increased the situational awareness, which has improved the perception of battlefield environmental elements and has grown both manoeuvre speed and fire precision. Extended connection enables troops to conduct combat actions that cover larger distances and spaces than in the past. Information availability and reliability allow a quick reorganisation of the tasks and a full integration of the military units that have recently entered the theatre of operations. The networks level of development determines a synchronisation and correlation in time and purpose of the dispersed troops.

Command of a robustly networked force improves information sharing and collaboration, quality of information, and shared situational awareness resulting in dramatically increased mission effectiveness. The networked information has impact on the application of combat power, battle space synchronisation, decision-makers and staffs, lethality and survivability, force agility, and operational tempo⁷. *Figure 1* presents this process in detail within the network enabled organisational context.

Presently, there is a trend towards the extended use of the information technology and communications in defence systems in order to develop operational capabilities at minimum costs. In most of the situations, the main intention is oriented toward network working, namely making networks of sources, information,

⁷ Cf D. Cammomns, J.B. Tisserand, D.E. Williams, A. Seize, D. Lindsay, *Network Centric Warfare Case Study, Volume I – Operations*, V Corps and the 3rd Infantry Division (Mechanised), 2003, p. 13.

executors, commanders etc. This development has the advantage of the use of the great evolutions in the information technology and communications field. Concepts like NCW and NATO NEC are designed to develop and extend important capabilities as: information collection, processing and dissemination; decision quality and command efficiency; cooperation between different structures and between different levels of the same structure; flexible use of the military units and defence systems⁸. These new concepts impose enhanced methods or even new methods of conducting operations. Introducing new capabilities could lead to deep transformations in defence

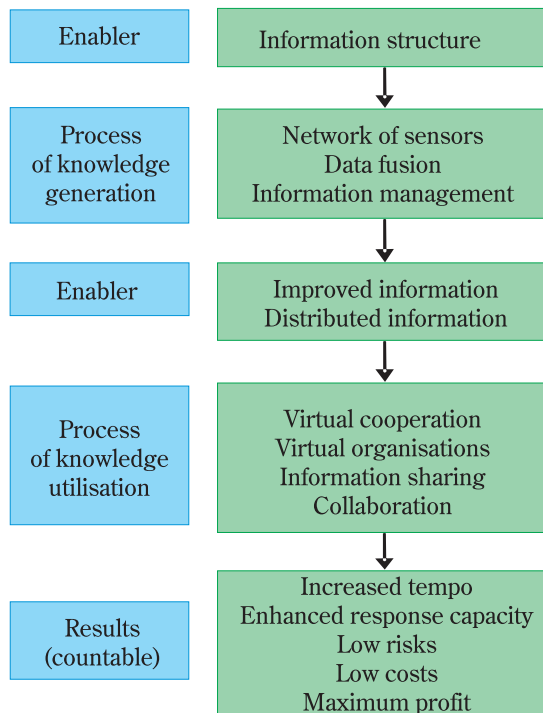


Figure 1: Command of networked forces

organisation, with regard to not only technical systems exploitation but also troop tactics and specific training. Concept development also coincides with the efforts to adapt to the global strategic and political environment established after the *Cold War* age, with its particular fragmented and sometimes unclear security threats. One of the main elements demanded by the NCW and NATO NEC concepts is achieving interoperability. Interoperability is a procedure used to strengthen equally the efficiency and effectiveness of the combined or joint forces, and the required capabilities for the full range of Alliance operations. Interoperability is an essential facilitator and an important force multiplier⁹.

Several operational scenarios for operation or crisis management could be conceived in order to better understand the missions assigned to the C4ISR systems, and to observe major information needs and requirements. Information requirements include data, communications, capabilities, and cooperation tools

⁸ Cf G. Timofte, R.V. Vasile, *Direcțiile de evoluție a sistemelor C4ISR impuse de cerințele rezultate din conflictele militare contemporane*, Session of Scientific Papers *Strategii XXI*, National Defence University “Carol I”, București, 2008, p. 2.

⁹ *Enhancing Interoperability*, Executive Working Group, Brussels, 2008, p. 1-1.

that facilitate success in any scenario. The relationships between operational scenarios and information requirements assigned to the C4ISR systems could be represented like in *figure 2*¹⁰.

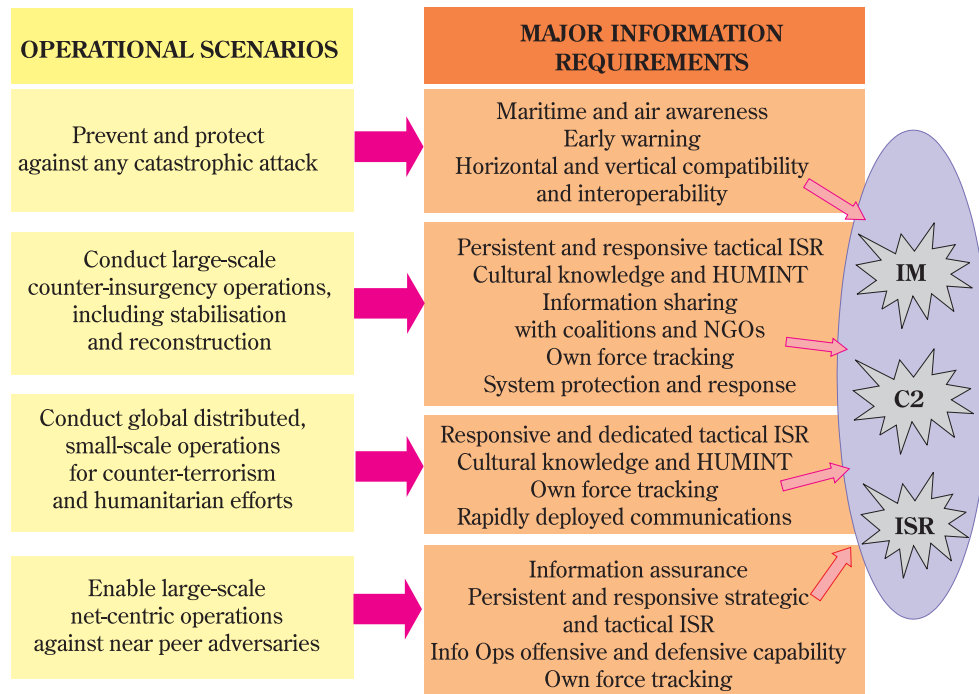


Figure 2: The relationships between operational scenarios and information needs

Even after the scenarios assessment, a certain common line could be observed, they demand some particular information requirements out of which eventually result three specific areas or domains, as follows: information management (IM); command and control information capability (C2); intelligence, surveillance and reconnaissance (ISR). Taken as a whole, the three combined domains form a so-called combat information capability.

NCW and NATO NEC Implications over C4ISR-Type Information Networks

Military operations of the 21st century are characterised by a continuous growth of complexity due to the allied effort to accomplish the objectives, and to the interlaced nature of strategic, operational, and tactical levels, as well as because of the mixture of military and civilian objectives. Increasingly more military

¹⁰ *Defense Science Board, Summer Study on Information Management for Net-Centric Operations*, vol. II, The Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Washington, DC, 2006, p. 10.

commanders face the problem regarding the conciliation of conducting traditional military operations with overall mission and national policy objectives.

Globalisation, technological developments and the pace of transition to the Information Age deeply affect political, social and security environments, including NATO's ability to respond to the new threats, demanding new deterrence, warning, and prevention strategies against terrorist attacks, with amendments in the proper application of the military and civilian powers, within the effects-based operations.

This kind of arguments determines the transformation of the Alliance and its members alike by enhancing the decision-making processes based on information superiority and NEC. This approach is aimed at a deeper integration of the political and military tools, the adoption of new methods and organisational institutions able to generate rapid and decisive results at the tactical, operational and strategic levels, outside the traditional areas of responsibility. Resizing the decision-making process, based on information superiority and implementation of the NCW and NATO NEC concepts, represents an essential part of the armed forces transformation, where information systems play a decisive role. The general framework of the Alliance transformation is presented in *figure 3*.

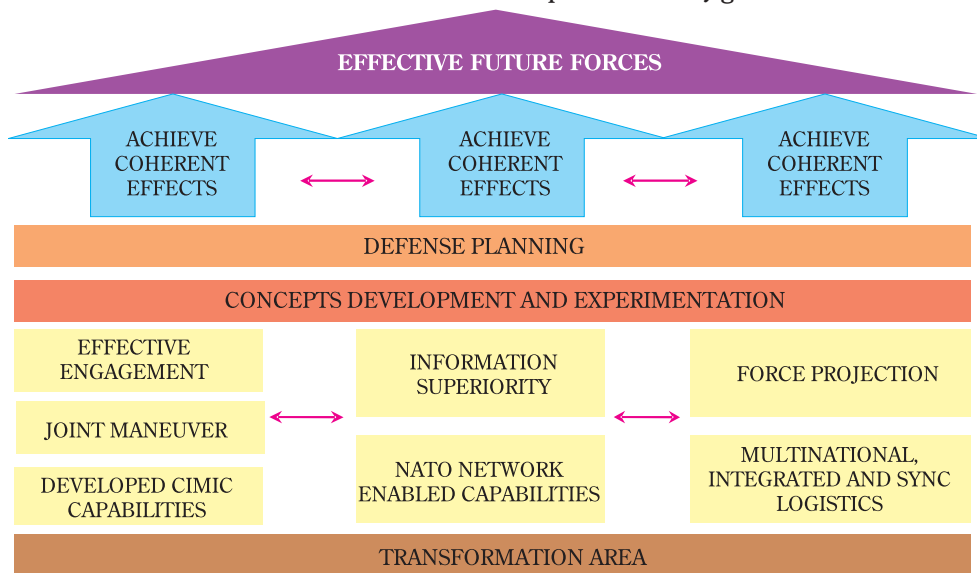


Figure 3: Effects-based operations

This purpose is ensured in the military by developing the potential of the C4ISR systems that rationally encompass the elements involved in the sensors interconnection (sources of information), performers/weapon systems (operational elements) and decision-makers, together making possible the development

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of network-centric and effects-based operational capabilities¹¹. Providing information assurance, with direct influence on combat power and mission efficiency, drives the optimisation of the deployment and support of joint forces.

The future cyber battle space will include elements of the strategic concepts of NCW and NATO NEC that first will transform information in power factor and increase reaction capacity and precision of force commitment, and secondly will quickly include all the conceptual and technological innovations from the military. It is important to emphasise the fact that if the new millennium conflicts are conducted mainly in a coalition or alliance environment, then the most difficult obstacle will be represented by bridging the technological gap between the participant states.

The conceptual framework of NCW and NATO NEC and the way to conceive the integration of data collecting capabilities, decision-making, and transmitting the decision to the operational elements is synthetically presented in *figure 4*.

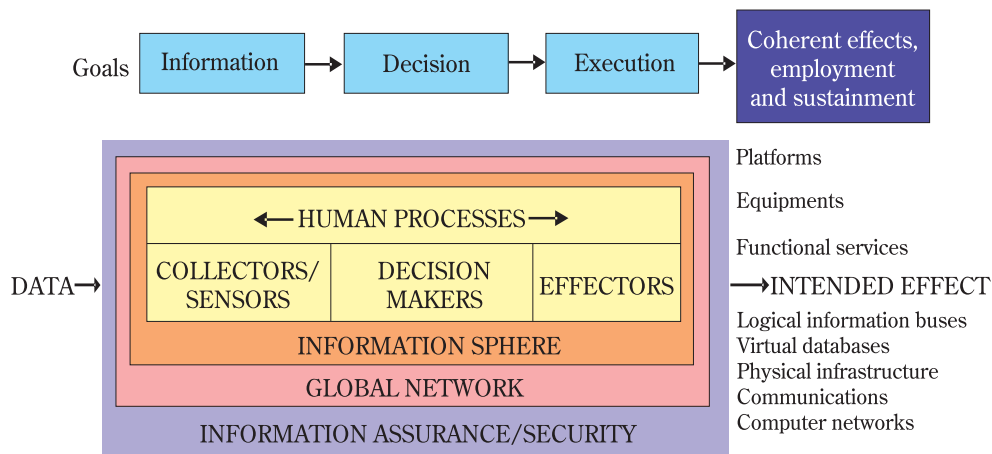


Figure 4: The conceptual framework of NCW and NATO NEC

The integration of these dimensions (elements) allow the Alliance structures and NATO nations to create a common picture of the battle space and consequently to enhance its level of situational awareness and the effectiveness of the common actions. The principle of achieving the common operational picture is shown in *figure 5*.

Concepts like NCW and NATO NEC will allow troops to be able to take action within their structures or a coalition of forces in a way that should be redefined to match the actual concepts regarding military operations and information systems architecture. Conducting the forces demands integrated C4ISR systems at every echelon.

¹¹ NATO Network Enabled Capability Feasibility Study, v 2.0, Executive Summary, NC3A, Brussels, 2005, p. 7.

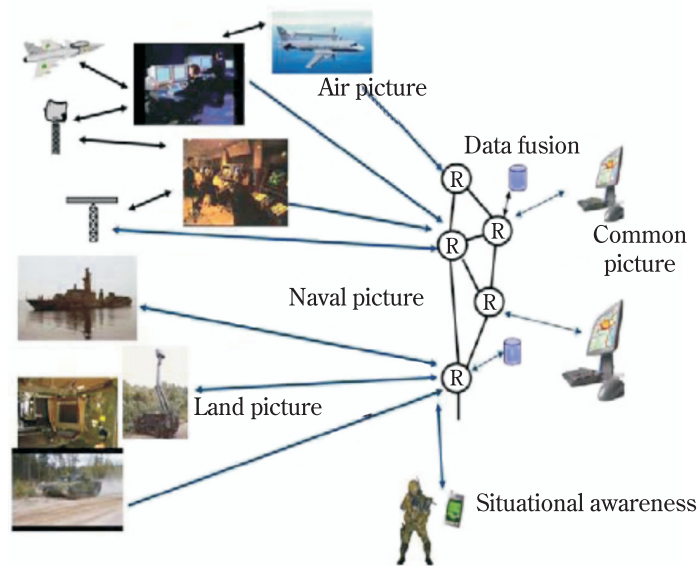


Figure 5: The principle of achieving the common operational picture

Under the conditions of particular dynamism of the military actions and positions fluidity, the C4ISR systems have to ensure a full cover with leadership alternatives of the entire area of responsibility, real time command and control of the available forces and means, as well as efficient logistic support. The implementation of the NCW and NATO NEC concept is seen as a force multiplier, a generator of the information and decisional superiority, empowering a substantial increase in the missions' efficiency.

Assessment of the C4ISR Capabilities Development in the Romanian Armed Forces according to NATO NEC Environment

At this moment, transformation is the most important observable fact in the military. This is a key word in NATO and at the same time in the Romanian Armed Forces. Basically, transformation refers to:

- Reconsidering military operations nature, as well as doctrines, skills and assets.
- Influencing the C4ISR systems, with two general frameworks, namely Network Enabled Capability and Critical National Infrastructure.

The main purpose of the two frameworks is to obtain information superiority, which is one of the fundamental pillars of the NATO NEC concept.

Network Enabled Capability provides a better and faster support for the entire operations spectrum. The most important desired results are: information and decision

superiority (first objective of NATO NEC); information coherence and overall users' interoperability; increased awareness; increased flexibility.

These results become possible only within a Networking and Information Infrastructure that brings together sensors, command and control centres, and effectors, regardless they are on land, sea or air.

In our opinion, basic criteria of NATO NEC are the following: intelligent networks; information management software included in network nodes; distribution of broadband services; end-to-end Quality of Services; security solutions evenly distributed in the entire system; users' mobility.

The purpose of NATO NEC concept is to create intelligent networks able to have an operational contribution to information management and dissemination. This service requires information software management applications included in network nodes, implemented command and control, administrative applications (Intranet), and widely use of graphic and imagery tools.

For these applications broadband services are needed. These services require real time data, that is to say multimedia service with guaranteed end-to-end Quality-of-Service for video streaming, sensors management, effectors control etc.

This whole environment demands security solutions evenly distributed throughout the system, in order to serve different users communities (information security, registration and authentication of the users etc.).

And last but not least, NATO NEC concept requires the support of users' mobility, specific systems and technologies that extend voice, data and multimedia services to the fielded units, down to soldier level.

Taking into consideration the second mentioned framework, it is important to emphasise that it started to be consistent after 9/11 having the following basic criteria: proprietary or dedicated data flows; network redundancy (grid systems) and different transmission media (radio relay, satellite, optical fibre); automatic restoration of the users' connections through the mechanisms with Multiple Priority and Preemption; Operations System Support; use of online certified encryption equipments; control systems of the access to the public systems.

Network Information Infrastructure is composed of strategic Network Information Infrastructure – National Military Communications Network; tactical Network Information Infrastructure; Functional Area Services, as well as users and missions.

The first implemented element and one of most importance is the *Permanent Telecommunications Network*. This represents the infrastructure of the National Military Communications Network.

The Strategic Radio Network is a single channel network based on competitive radio equipments designed to provide communications capabilities for services' staffs

and deployable large units or for generation and regeneration of forces on the move, as well as a backup solution to the Permanent Telecommunications Network ensuring mainly data communications. In order to provide supplementary communications capabilities in some areas, there are deployable elements of the Permanent Telecommunications Network mounted on containers or special vehicles.

Each service (especially air force and naval forces) can make their own specific sub-networks.

To improve the performance of the Romanian National Defence Network, we consider an evolutionary strategy should be adopted. This strategy is basically founded on the following stages:

- assessment of existing systems;
- projection of a national Overarching Architecture;
- development of necessary Reference Architectures and Target Architectures;
- roadmap for Target Architectures.

The stages have already been approached in accordance with the operational requirements and available funds. Today, the Permanent Telecommunications Network represents the infrastructure of the National Defence Network that is used by all the structures of the Romanian Armed Forces. Over this communications system there were accomplished: the military INTRANET system (INTRAMAN), encrypted video-conference system, specific naval forces applications (ARGUS), environmental applications etc. At strategic level, these networks represent the pillars of the Network Information Infrastructure. The development concept of the National Defence Network will allow the evolution towards a component of the NATO network confederation. The actual performances provide operational capabilities and interconnection with other networks with certain limitations. In our opinion, the most important fact is the permanent commitment for the improvement of these capabilities.

The strategic Network Information Infrastructure provide communications in support of a significant number of functional applications, such as: the National Air Command and Control System (including sensors connections – FPS117, GAP FILLER and radars and updated analogical vectors – air bases, ground-to-air missiles, electronic warfare units), NBC Surveillance and Warning System, National Integrated Meteorological Information System, Maritime Complex Observation System (SCOMAR), Military INTRANET etc.

Currently, the Permanent Telecommunications Network is an enhanced EUROCOM system based network with EUROCOM, STANAG and commercial (ITU-T) gateways to other networks. All of them ensure a high level of interoperability

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with commercial (ITU-T), and tactical (STANAG and/or EUROCOM) networks. The Permanent Telecommunications Network is also interconnected with NATO General Communications System (NGCS), and with the Italian National Military Communications Network using the SICRAL satellite system. In the future, the Permanent Telecommunications Network will provide services to NATO users on Romanian territory. Furthermore, there is possible to interconnect the Permanent Telecommunications Network with other nations' tactical networks.

The Strategic Radio Network is intended to provide minimum voice, data and link capabilities for all tactical and operational units HQs, when other means of communication cannot be used. This network is employed at the level of the services' HQs, for tactical and operational units (mainly for the units made available for NATO operations). The communications provided are protected to interception and jamming with incorporated crypto devices and frequency hopping equipments. The Strategic Radio Network has integration capabilities with INTRAMAN messaging services.

Major services offered by the military INTRANET or INTRAMAN, as well as the information systems which use it as support infrastructure are:

- Basic information services (electronic mail, files and printing, WEB, hierarchical activity management, hierarchical documents flows management etc.).
- Support for functional information systems: Support Information System of the Military Actions (SISAM); Defence Intelligence Information System (SIA); Modelling and Simulation Information System (SISMIM); Weapon Systems (SISARM); Assisting Military Education Information System (SIMIL); Integrated Logistic System (AILS).

There are Out Of Area extensions of the Romanian National Defence Network to support our deployed troops in international operations. There are also extensions for the Romanian Ministry of National Defence representations to NATO, ACO and EU. These extensions provide voice, data and VTC services.

Expansion of Romanian Armed Forces' Defence Capabilities by Implementing Integrated Technologies to Ensure Flexible and Multifunctional Capabilities

The operational needs that can be defined for a defence common network are: access to the network to meet criteria like flexibility, simplicity and security, in the country or out of area, in order to allow the users to exploit the network:

- from fixed sites through military, governmental or commercial infrastructure;

- from fixed sites via deployable CIS/CCIS assets;
- from mobile assets/commands/units via connections set up by means of remote access services.

One of the most important technical requirements for the National Defence Network is to comply with most relevant standards to ensure interoperability. The network topology has also to grant a suitable flexibility, survivability and seamless services integration according to users needs. The network should support as well different services/applications/functions and the relevant information flows, granting both autonomous and common operations, integration and data exchange when required by specific services or applications.

Not less important is the employment of the latest technologies such as Software Defined Radio, Secure Communication Interoperability Protocol, and TACOMS Post 2000 etc.

The National Defence Network should provide support for: network interconnecting services; core services; functional areas services for human resources, reconnaissance, operations, logistics, planning, geo-meteorological, and simulation etc. This approach is similar to NATO's approaches used for the development of NATO Bi-Strategic Command Automated Information System, Deployable CIS, and NATO General Purpose Communication System.

Within the described scenario, an evolutionary process leading to a "*network based*" capability within an acceptable period is of key importance. To this aim, actions should be concentrated on the implementation of a "*Common Network*" by taking advantage of the recent procurements and by optimising and integrating systems, already in use or to be introduced in use in the near future. Under the assumptions on targets made, the following requirements will lead the process:

- support for broadband services (multimedia integrated services);
- optimisation of the available transmission bandwidth;
- upgrade/implementation of access networks;
- increase in network security through NATO approved encryption systems, and NATO security concepts (i.e. multilevel security);
- upgrade of existing or introducing new IT platforms to support core services;
- increase in integration with the achievement of out of area seamless support through satellite bearers, and high capacity connectivity to mobile assets;
- enhanced interoperability between National Defence Network and NGCS;
- increase in automation and control functions to replace reduced manning.

These requirements lead to final objectives achievement:

- building a secure and highly survivable network;
- full integration of both strategic and tactical network components;
- network architecture and adopted technologies able to optimise the capabilities regarding the efficiency and management;
- evolution of services.

Starting from the present situation, a sequential action plan could be defined in order to build a common network for the Romanian Armed Forces. The services provided by the network are *core services* and *functional area services*, in accordance with the concept of Bi-Strategic Command Automated Information System. Core services are pretty well extended in the network, and in our opinion the main issue is represented by less developed services dissemination to all the users.

The Functional Area Services is driven by the need of real time information exchange between effectors and sensors, as well as by specific services for different missions. The services will be provided starting from core area towards specific areas as national users, NATO users, users from different coalitions, and participants to missions abroad.

For the short term perspective, we believe that the Romanian Armed Forces will focus their efforts on integrating the existing systems and introducing only integrated subsystems, or subsystems with integration capabilities into the existing network.

For the immediate period of time, ambitions are higher. Because of the high demanding capacity of new information systems, the Romanian Armed Forces will concentrate the efforts to upgrade the existing infrastructure by introducing the high rate bearers. For some areas high capacity optical fibre area networks will be achieved. In order to increase the processing capabilities, multi-protocol – multi-service switches will be introduced.

Furthermore, the efforts will be focused on: integration of the existing systems made through specific gateways that will not limit performances; use of software defined radio that will be extended for all services and all type of communications – radios with these capabilities are already in use; setting up a global network management system; in INFOSEC area, protecting the information and the systems being another major task, IP encryption is to be used as a standard solution; sensors integration and use of smart sensors.

*

The Romanian Ministry of National Defence started different modernisation programmes, many of them at lower echelons, due to the commitment level at the programmes initiation moment. Currently, this commitment involves higher

echelons, as it has become obvious that because of the lack of coordination these systems could hardly be integrated at brigade level.

We consider that the only way to solve all the aspects regarding the integration is to start a process of defining the C4ISR system at brigade level. The reason of this decision is that a multilevel, flexible and operational C4ISR system is potentially the most important force multiplier for overall battle space.

In order to develop a competitive C4ISR system, we believe that the architecture recommended in NATO C3 Systems Architecture Framework is the best approach. As basic technology, battle space digitisation is adopted, and the fundamental idea is C4ISTAR concept. Not less important is the coordination with interacting programmes.

The development and use of operational, digital and mobile communications to provide reconnaissance, command and control data to the soldier are based on operational requirements, and technological, time and budgetary constraints.

C4I system should make available command support for all levels. All weapon systems have to be integrated. Mobility is a basic feature for all tactical systems. Protection is the key behind which are security, electronic countermeasures, and data encryption. Communications support should provide enough capacity for command and functional services support. Not least, the system must ensure interoperability between national and international areas, within the North Atlantic Alliance or with the military structures of the member nations of the European Union.



INFLUENCE OF THE NEW INFORMATION ENVIRONMENT ON THE TACTICAL LEVEL OF MULTINATIONAL MILITARY ACTIONS

Colonel Adrian MÎNDROIU

The technologies of the Information Age will revolutionise the way in which military actions are carried and will also completely change the physiognomy of conflicts. The most significant advantages provided by the new means of waging wars will derive from the quantity, quality, high-level processing and the way of using pieces of information.

The information environment offers a plus for the armed forces that are connected to the new technology. These advantages consist in a high exploitation of information using network facilities. At the tactical level, radio communications are especially used because this kind of tools provides mobility and the necessary bandwidth in order to send the required information.

Keywords: *Information environment; information; network; interoperability; radio communications; cyberspace*

New concepts and technologies allow developed countries to enter the *Information Age* with technological and doctrinaire advantages that are hard to reach for other countries. Technologies of the Information Age will revolutionise the way military actions are conducted and will change the physiognomy of conflicts. The most significant advantages offered by the new ways of conducting war will derive from the quantity, quality, high-level processing and the way of using information. The capacity for innovation during peace and for permanent adaptation during military actions requires individual and institutional agility. This agility is the product of rigorous education, correct application of new technologies and a deep understanding of political and social context. Innovation and adaptation require imagination and the ability to enunciate the right questions.

In the future, diminished but professional manpower in the armed forces will require improved techno-military systems, which will increase the pace of conducting combat actions, efficiency

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and the degree of their protection, sustainment and survival. Future operations will be joint, multinational and will be conducted in cooperation with international and nongovernmental organisations. All services must be easily deployable, sustainable in the theatre, must have quality military capabilities, a high level of protection and survival, and must be flexible, mobile, adaptable and modular so as to accomplish the full range of military missions and operations (*“expeditionary forces”* – the requirement of the new NATO Ministerial Guidance). They must be able to quickly shift from war to stability and support operations and vice versa.

Some new characteristics of conducting operations in cyberspace

Cyberspace, as part of the information environment, is one of the five domains, together with air, land, maritime and cosmic space. All these spaces are interdependent and elements of cyberspace can be found, physically, within all these domains. Activities in cyberspace ensure freedom of action within the other domains, which create effects in the cybernetic one, as shown in *figure 1*.

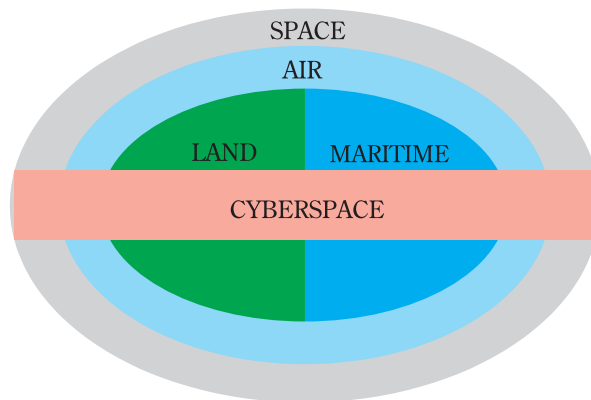


Figure 1: Relationships between the battle space operational domains

Cyberspace consists in a multitude of networks and centres that, even if not completely interconnected at this moment, tend toward such finality. Networks can be isolated using protocols, encryption, firewall or physical separation; they are usually grouped within domains specific to an organisation or a function.

Cyber situational awareness includes information about allied forces, the enemy and other relevant data about activities conducted in cyberspace¹. The capabilities and vulnerabilities of the enemy and allies must be clearly

¹ *Cyberspace Operations Concept Capability Plan 2016-2028*, Tradoc Pamphlet 525-7-8, Department of the Army, Training and Doctrine Command, Fort Monroe, Virginia, 2010, p. 18.

perceived, as well as the intentions of the adversary. At the same time, it is necessary to have a clear image of the goals and critical moments for the information that circulates in networks, as well as of the finality of the effects and actions that lead to the degradation of cyberspace, as far as not only the adversary but also own troops are concerned.

Network cyber operations are a component of cyber operations through which the critical infrastructure and key resources of the command and control network are substantiated, protected and defended during combat. Network cyber operations comprise three management processes: *cyber projects*; *cyber content*; *cyber defence*, which consists of information sources protection, computer network defence and critical infrastructure protection. Through network cyber operations the following functions of the network are ensured: planning and execution, installation and operation, services protection, defence, maintenance of own cybernetic capacities.

The basic principles of cyber operations are presented in *table 1*:

Tenet	Purpose	Remarks
Centralised Control, Decentralised Execution	Control by a commander with a broad perspective; execution by those who best understand the tactical intricacies of a dynamic operation	Enables most effective C2 of capabilities and forces
Flexibility and Versatility	Exploit mass and manoeuvre simultaneously; employ at all levels of war	Flexible and versatile cyberspace operations act as a total force multiplier
Synergistic Effects	Integrating use of forces to create effects that exceed contributions of individual force elements	Ability to freely observe operational environment allowing unprecedented speed and agility
Persistence	Ability to conduct continuous ops; visit and revisit targets nearly at will	A function of military power's speed and range
Concentration	Concentrating overwhelming power at the right time and place	Fighters must guard against dilution of power
Priority	Commanders should establish clear priorities for use of power	Demands for power may exceed available resources
Balance	Must balance opportunity, necessity, effectiveness, and efficiency against risk to friendly forces	Cyberspace operations support other missions across the range of military operations, giving commanders more capability and more options with which to balance resources

Table 1

Cyber warfare is another component of cyber operations through which cybernetic power extends beyond defensive limits for the detection, engagement, domination and defeat of the enemy. The objectives of cyber warfare capacities consist of computer and communication networks through which are ensured the data processing and the equipment, systems and infrastructure control. The actions of cyber warfare employ dynamic cyber exploitation, attack and defence for the accomplishment of the following functions: collecting and analysing data within the network; studying and classifying cyber threats; tracking, locating and exploiting the actions of the adversaries; ensuring cyber hints, indications and warnings; ensuring cyber situational awareness.

Cyber support represents a series of support activities that are generated and employed for the execution of network cyber operations and actions of cyber warfare. Cyber support has the following tasks: to estimate security vulnerabilities and risks; to eliminate vulnerabilities and increase the degree of security; cyber preparation; legal aspects; cyber research and assessment.

Ensuring the capacities regarding cyber operations due to computer networks, telecommunications and advanced technologies convergence in the battle space requires the harmonisation with electronic war actions. A particular aspect of this problem is that of electromagnetic spectrum management, which must be administrated at the coalition level.

In cyberspace, the interval of time between planning and execution can be in the order of milliseconds². They can be created simultaneously at strategic, operational and tactical levels, within several domains. The process of observation, orientation, decision, and action remains a viable construction to examine the procedure of elaborating decisions in cyberspace. Operations in cyberspace may be produced almost instantaneously, with a speed never before accomplished, a phenomenon which leads to the necessity of making decisions at the same speed.

There must be an organisational structure at the division level which ensures the services solicited by network cyber operations. These services presume coordinating activities regarding planning, installing, operating, maintenance and protection of the division's information network. This structure must ensure the capacities required by network cyber operations regarding other concomitant operations, the viability of the command system under conditions of maximum mobility and other requirements of the commander imposed by the tactical environment. The division must be able to use and protect its own network without soliciting the support of the superior echelon. One must also consider,

² *Cyberspace Operations, Air Force Doctrine Document 3-12*, 15 July 2010, [www. E-publishing.af.mil](http://www.E-publishing.af.mil), retrieved on 15.11.2010, p. 9.

as a limit to division capacities, the fact that planning and integrating all aspects required by network cyber operations is executed at the strategic level, the division acting on the basis of an extract from the plan of the superior echelon.

The brigades and other units in the organisational structure of the division execute network cyber operations with their own capacities from the communications and information structure, in cooperation with the information and security structures. The units must be able to use and protect their own networks, without support from the division. Subunits depend on the superior echelon to guarantee nucleus services, access and protection of the network.

The new systems of information and sensors have led to the improvement of the information environment and have amplified the effects of manoeuvre and fire. The information environment for the tactical level emphasises manoeuvre synchronised with the precision of fire, the effect being devastating for the enemy.

Communication systems used in multinational environment

At tactical level, considering the requirements for high mobility, radio systems have a special role for zonal covering and access and combat radio networks that ensure the implementation of services, applications and systems of the mission (tactical data communications), as well as the systems/services of identification, navigation, synchronicity and monitoring of the position of forces and automatic conduct of fire.

The principles of radio propagation make VHF and UHF bands the ideal candidates for tactical environment. Where great mobility is required, VHF and UHF will ensure radio communication at distances of tens of kilometres, depending on the relief and specifics of equipment. The forms of wave used today within the coalition are a combination of national and international standards. The military band VHF (30-88 MHz.) is predominantly used for tactical ground-to-ground communications. The forms of wave used in this band are typical AM and FM fixed frequencies with modes of hope available to meet the requirements of electronic protection measures (EPM). The most recent military systems offer voice and digital data capabilities (the family of advanced digital radios VHF for the BOWMAN British program).

The military band UHF (255-400 MHz.) is available for varied services, including military UHF SATCOM, however the majority of frequencies are allotted to ground-to-ground communications.

One of the most important trends that influence military and civil radio communication systems are software defined radio stations (SDR).

For the Romanian forces that act in theatres of operation, the contact with the new C4ISR tactical systems has been an element of novelty. If, during the participation in operations in Iraq, the Romanian units benefited from a small number of means offered by the allies, the situation is radically different in Afghanistan. By providing Romanian combat structures with mine resistant ambush protected (MRAP) armoured vehicles in complete configuration, the Romanian troops had contact with the high-end technology used by the American Army. MRAP combat platforms have in the standard configuration an ultra short wave radio system, electronic countermeasure devices and a location and identification of friendly forces device (Blue Force Tracking – BFT). The BFT device permits establishing own position and that of other forces equipped with this facility, as well as written messages communication service. The segment of tactical communication is completed with the use of satellite terminals which use resources of the United States military satellites and commercial channels. Telephone terminals are made available in the NATO network and the global American network for the voice and data segment within the command points and working posts within classified data transmission networks.

The communication network is completed with services ensured for the national domain. The segment of communications with the country through voice and data is ensured by installing Deployable Communications and Information Modules (DCIM) within the command points of regiments. The module uses the resources of commercial satellites; the protection of the channels is ensured through encryption devices. As a backup option, powerful radio stations in short waves are used.

Monochannel radio networks represent the most used system, made up of auto stations and HF, VHF, UHF and dissipated spectrum radio stations (with speeds of minimum 256 Kbps for distances of up to 10 km), mobile or fixed, which ensure direct voice and data communication between mobile subscribers who act in the division's strip. Monochannel radio networks are used especially until the installation of the system and must be resistant to interception and interference, ensuring voice and data communication.

The function of package commutation offers IP transport services guaranteeing communication within centres and between them and is ensured within Ethernet commutations, routers as well as computer networks' protection system devices. For the local transport of IP packages within element C2, the commutation function is ensured through local communication services, in the cluster of communications and information system.

For external communications, the IP packages succession is transferred to the management function of transfer capacity. Services specific to the package commutation are ensured for connecting radio coverage function to guarantee the information services function. The physical components that implement package commutation must ensure common interfaces for packages IPv4 and IPv6 or tunnel solutions, ensuring the transit of addresses IPv6 to IPv4 networks and vice versa.

At tactical level, considering requirements for heightened mobility, radio systems for zonal coverage and access to the stationary network have a special role, as well as combat radio networks that ensure implementation of services, applications and systems of the mission, identification, navigation, synchronicity and monitoring of the forces' position and automatic fire systems/services respectively.

A radio communications integrated tactical system consists of: local zonal subsystem, VHF/UHF and HF networks as well as high capacity radio networks.

The communications system must be functional while in the theatres of operation in order to ensure the following connection needs: with the superior echelon, with subordinates, with cooperating structures and the segment of connections with the country.

For the segment of communication with the superior echelon, with the NATO Operations Command that commands military operations respectively, the responsibility to accomplish the system and provide the points of presence belongs to NATO. In this variant, the existence of equipment compatible with that used by NATO structures would allow total connecting, the system being integrated into that of the mission, without limiting itself only to some points of presence. The connection with neighbours is achieved through the system made by the superior echelon, according to cooperation assignments within Annex Q of the Operations Order. The frequency manager and the crypto structure of the NATO Operations Command that exercises leadership are responsible for allocating necessary frequencies and encryption keys in order to establish cooperation connections.

A separate category is represented by the connections with governmental or civil organisations in the operations zone or with the host nation. This process is more predominant within non-Article 5 operations and is accomplished through subscription to commercial communication systems, if those are still functioning, physically separated from military ones. If commercial systems are not available, distinct communication channels should be ensured with these actors, while respecting security requirements.

The segment of communication with the country should be accomplished as a distinct element, preferably without a general interconnection of systems.

Ensuring encryption frequencies for this segment is a national prerogative and is accomplished by specialised personnel in the country.

For Romania, the segment of satellite connections is more diminished, due to the lack of space resources. Communication is ensured through radio-relay equipment and high-capacity radio, which must ensure the basis of network with distributed topology. The means of communication by satellite must constitute the back-up solution or the solution for some situations that may not be solved in any other way.

Implementing the Ethernet over Internet Protocol – EoIP system is necessary, with the use of secret unique transport channels, this solution having been adopted by the commercial segment and most systems in NATO member countries.

Digitising radio stations has evolved as the speed and processing capacity of DSP circuits have increased and reached the level where most of the functions can be accomplished by a digital and flexible hard. The SDR concept is based on the fact that the functionality of a radio may be controlled through the soft. While the hard is not affected, various versions of soft can be chosen or can be loaded into the radio according to requirements. The availability of several different forms of wave in a radio can reduce the cost of the unit due to the “*scale effect*” – it can suffice that one single type of radio hard can be produced in large quantities and afterwards it is provided with various soft versions, for various services.

An integrated tactical system for radio communication consists of: zonal local subsystem (LAS), VHF / UHF and HF networks as well as high capacity radio networks.

From the standpoint of communications, the tactical domain is characterised by mobility in low bandwidth environment. All functions developed in this environment must adapt so that they can be sustained in conditions of mobility, with altered connections. Applications and protocols which have been designed to function in stationary networks do not behave adequately in tactical domain.

Aspects of ensuring interoperability

It has become evident that an “*allied architecture*” is necessary to support the development of an interoperable communication grid.

For the tactical domain, interoperability on wireless interfaces is a requirement for the multinational coalitions that must execute expeditionary operations. A minimum range of forms of wave must be standardised between potential partners of the coalition. A common programme must include all forms of wave that are considered necessary for the following decades, as for example tactical data lines (TDL) and common data lines (CDL).

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Airborne networks and interoperability between land troops and airborne users will be essential, as the concept of joint forces is applied from very small echelons. Marine and airborne users must also be capable to use interoperable applications with land forces.

The communication infrastructure requires more and more bandwidth. Through this infrastructure more persons who are in different areas, thousands of kilometres apart, must be allowed to introduce at the same time in their personal computers the data necessary to resolve a common problem, without discontinuities. Bandwidth is more and more in demand due to the increase of information volume and the necessity of increasing transmission speeds. If this proves to be insufficient, a subjective orientation of message priority must be performed. This is done by temporarily forbidding some radio equipments or computers in order to free the band spectrum necessary for high priority messages. This can have collateral effects on units that cannot receive messages, these units becoming “*blind*” in combat space.

In combat space, aircraft and other armament platforms may become sensors and offer new capabilities of communication and combination of data; this process signifies that many weapons are not considered simply munitions, as they become a part of the sensor system, due to the fact that they are guided from launch to their objectives and to the final moment, which is impact. NCW depends on the interoperability of communication equipments, on collecting and transmitting data, as well as on the necessary software in order to allow the creation of user networks, sensors, as well as armament platforms with or without crew, using radio transmission through microwaves technology, infrared signals or laser beams. The models offered by this technology allow faster communication between users, services, as well as rapid exchange of data and information between platforms of information and sensors.

*

The new systems of information and sensors have led to the improvement of the information environment and have amplified manoeuvre and fire effects. The information environment emphasises manoeuvre synchronised with fire precision, the effect being devastating for the enemy. Command and control systems have undergone rapid transformations in recent years, due to the alert pace at which information and communication technologies have evolved, and the transition from C2 systems to C4ISR systems is due to the rapid integration process.

The implementation of this concept has been achieved through a systemic approach of the leadership process and through the introduction of new scientific

conquests in the domain of information technology. As a result, improved technology, which ensures mobility, armament systems, sensors and C4ISR systems continues to reduce the role of time and space factors, determines rapid rhythms of operations and generates large volumes of information that, if not efficiently managed, may diminish the capacity of reaction of personnel and, finally, of combat forces. The consequences of this evolution are spectacular and the time necessary to implement the management cycle has greatly diminished, and now tends toward real time management.

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STABILITY OF LAND FORCES COMMUNICATIONS AND INFORMATION SYSTEMS IN MODERN BATTLESPACE

Major Gheorghe-Adrian GÎRTONEA

The organisation and assurance of the Communications and Information Systems (CIS) stability is an extremely complex activity that presents many particularities according to the location and the specifics of the battle actions due to a large quantity and diversity of radio-electronic equipment, its varying disposition, the greater and greater possibilities of destabilisation and influence of the CIS functioning by the enemy, the diversity of the operational scenarios and the concrete conditions of the military operations development. The main components of the CIS stability could be availability, reliability, viability and stability.

Reliability has increased in importance over the past 30 years as systems have become more complex, support costs have increased, and defence budgets have decreased. Reliability is a basic factor affecting availability, readiness, support costs, and mission success.

Keywords: *communications systems; stability; availability; reliability; maintainability*

The constant and continuous functioning of the integrated tactical Communications and Information Systems (CIS) into the modern battlefield represents a major request for the success of military actions.

The stability of a CIS is its property to remain in the stationary equilibrium state when it is subject to perturbations (disturbing actions). The system stability includes the ensemble of the measures of organisational, technical or other nature, which ensure the integrity of the adopted structure and, also, its secure functioning, according to the operational and tactical requirements taken into account when it was designed¹.

The CIS stability is determined by the type and intensity of the action of the factors and the environmental conditions in which it must accomplish its functions and ensure the projected services in peace, crisis and post-conflict situations, to which it is added the permanent status of the critical potential target for the enemy forces, especially in transition, crisis or war (high intensity conflict) moments.

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¹C. Alexandrescu, D. Iliu, C. Mincu, *Bazele matematice ale organizării sistemului de transmisiuni*, Editura Militară, București, 1994.

The organisation and assurance of CIS stability is an extremely complex activity that presents many particularities according to the location and the specifics of the battle actions due to a large quantity and diversity of radio-electronic equipment, its varying disposition, the greater and greater possibilities of destabilisation and influence the CIS functioning by the enemy, the diversity of the operational scenarios and the concrete conditions of the military operations development².

From the experience gained and the studies conducted so far, it results that the main components of the CIS stability could be the following: the CIS availability; the reliability of the technical means and organisational structures; the CIS viability and their components; the stability to jamming and perturbation of the CIS links which have as a propagation environment the electromagnetic waves; the CIS security³.

Availability is a measure of the degree to which an item is in an operable state and can be committed at the start of a mission when the mission is called for at an unknown (random) point in time. Availability as measured by the user is a function of how often failures occur and corrective maintenance is required, how often preventative maintenance is performed, how quickly indicated failures can be isolated and repaired, how quickly preventive maintenance tasks can be performed, and how long logistics support delays contribute to down time⁴.

When it refers to a service or to the CIS as an ensemble, availability is calculated starting from the individual components, included in the service assurance or in the global system functioning. The system (or the service) is considered to be available when all the involved components are available and that means, normally, that the value of the system availability is lower than that of the components. The total availability can be divided proportionally among the components of the capability (using a top-down approach) or it can be calculated starting from the individual elements availability (bottom-up)⁵.

At tactical level, the CIS availability is conditioned by all system components functioning, under normal operational conditions or under the condition of some operations executed by the enemy using different modern weapon, research and electronic warfare systems. For example, at tactical level, where the radio component is very well developed, the availability is conditioned by the functioning of all radio equipments HF, VHF and UHF, in nominal parameters, as well as by the auxiliary devices functioning: tactical network access unit, user control device, vehicular user data terminals, rugged data terminals, personal digital assistant (PDA).

² G. Timofte, E. Tudose, D. Vişan, *Sisteme de comunicații militare digitale de campanie*, Editura Inedit, București, 2006.

³ C. Alexandrescu, D. Ilina., C. Mincu, *op.cit.*

⁴ DoD, *Guide for Achieving Reliability, Availability, and Maintainability*, Systems Engineering for Mission Success, Department of Defense, USA, 2005.

⁵ L. Bîrsan, *Stabilitatea în funcționare a sistemului CAI tactic în operații multinaționale*, *Gândirea militară românească*, no. 2, 2007, pp. 53-59.

Reliability is the ability of an item to perform a required function under stated conditions for a specified period of time⁶.

Reliability has increased in importance over the past 30 years as systems have become more complex, support costs have increased, and defence budgets have decreased. Reliability is a basic factor affecting availability, readiness, support costs, and mission success. Research into how things fail, the development of probabilistic approaches to design, an understanding of the distribution of failures over time, and other advances have made reliability a science⁷.

Achieving the required level of reliability begins with design. Some key issues that must be addressed during design are control of parts and materials, use of redundancy, robust design, design from the environment, designing for simplicity, and configuration control.

Without an understanding of the environment to which a system will be exposed during its useful life, designers cannot adequately design for or predict reliability. The process of understanding a system’s environment is referred to as environmental characterisation. The environment includes not only the operating environment but also all other environments applicable to the system. Often, the operating environment does not impose the greatest stresses. *Table 1* lists some of the environments that must be considered in designing for reliability.

Environment	Comments	Environmental Stresses and Factors
Operating	Includes all potential ways and climates in which the system will be used.	Temperature Humidity
Support	The environment in which a system is repaired and serviced must be considered.	Mechanical/acoustical vibration
Installation	For some systems, the process of installation imposes stresses that are higher than those of operation.	Mechanical/acoustical shock Moisture
Storage	For systems and products stored for long periods of time, the storage environment can be the dominant cause of failure.	Sand Dirt Electromagnetic interference
Transportation	The shipping and handling of systems and products can impose stresses such as shock and vibration that are different from or higher than those of operation.	Radiation Mechanical loads Corrosion Chemical reaction

Table 1

⁶ Allied Reliability and Maintainability Publications (ARMP-7, Edition 1), *NATO R&M Terminology Applicable to ARMPs*, Military Agency for Standardisation (MAS), Brussels, 2001.

⁷ Technical manual, *Reliability Primer for Command, Control, Communications, Computer, Intelligence, Surveillance, And Reconnaissance (CAISR) Facilities*, Headquarters, Department of the Army, Washington DC, 2005.

Reliability is one of the three factors determining availability. A perfectly reliable system would always be available for use. The availability would be 100%. Given that perfect reliability is impractical and unachievable, availability will always be less than 100%. However, availability is also affected by two other factors: the speed at which a repair can be made (a function of design referred to as maintainability), and the support system (number of spares, ability to get spares to where they are needed etc.). If repair could be conducted in 0 time (another impracticality), availability would be 100%. Thus, availability, like reliability is bounded – it cannot be greater than 100% or less than 0. Different combinations of reliability and maintainability can yield the same level of availability.

The CIS reliability represents the used equipment and adopted organisational structures property to carry out the systems mission in optimal conditions. Reliability ensures the work regime maintenance and support at the settled level, as well as the functioning parameters of the communications networks, nodes and links that are organised during the battle actions, under the random conditions of an important number of perturbation factors⁸.

The CIS reliability is estimated through specific indicators as: *hardware* and *software reliability*⁹.

Hardware reliability refers to technical communications and information network components and it is characterised according to the reliability of the CIS equipment that is used.

It can be evaluated according to: the probability to function without failures $P_f(t)$; the probability to fail $P_d(t)$; the average time of functioning without failures T_m ; the average time to restore the functioning T_r . When reliability is evaluated it starts from the idea the failures have a random character without the possibility to foresee exactly the moment of their emergence or production.

Actually, the emergence of failures and the right function of equipment are incompatible events that can be expressed using the following relation:

$$P_f(t) + P_d(t) = 1$$

Reliability can be determined for each piece of equipment separately, for groups of equipment (communication nodes, radio access points etc.) or for a system as an ensemble.

The main measurements that can be taken to increase the technical reliability of a CIS are: modular building of communications equipment (on functional blocks), easy to access and with simple interconnection; use of constant and secure equipment; providing an appropriate communications reserve and its placement

⁸ C. Alexandrescu, D. Ilina, C. Mincu, *op. cit.*

⁹ G. Timofte, E. Tudose, D. Vişan, *op. cit.*

in more departments to make opportune intervention when it is necessary; proper organisation and procurement of the maintenance subsystem and logistic assurance; proper training of the operators who install and exploit the communications and information equipment; placement and interconnection within a functional structure (communications nodes, radio access points) of the minimum necessities of communications and information technical equipment; organisation of communications links with performance and security parameters in use as high as possible and with closed values (preferably 0,97); connection achievement between two subscribers on the minimum link way.

Software reliability, a specific indicator for the modern CIS, is determined by the quality of the software products that are used to equip the CIS and every piece of technical equipment which has a calculation technique embedded. It can be defined as the probability for a programme (software product) to function without failures during a determined period of time and it refers to the quality of the services that are made by the used software products within the communications networks and within each piece of technical equipment considered to be a separate entity.

Software reliability can be evaluated according to: the probability not to appear software failures in a period of time $R_s(t)$; the average period of time between software failures T_m ; the software failures rate in a given period of time $Z_s(t)$.

The determination of the software reliability is based on the statistical data obtained from the applicative programmes in a given period of time, under real or simulated conditions. The achievement of increased software reliability can be done by: using competitive software products, with a great stability, written in evaluated programming languages; producing applicative programmes, adaptable and compatible with the technical support, with a modular structure (each logical modulus being implemented on different hardware supports); the software products must have detailed documentation and must be economical and easy to use; the base applicative software must provide increased protection against the information viruses actions and must include detection and localisation measures for them (anti-virus programmes).

State-of-the-art weapon systems (ground vehicles, ships, aircraft, C4ISR systems) and business systems depend on complex software. Modern hardware systems of all kinds contain electronic subsystems and components for which software provides functionality and flexibility.

Software reliability is defined by the Institute of Electrical and Electronics Engineers (IEEE), much like hardware reliability, as *“the probability that software will not cause a system failure for a specified time under specified conditions”*. But hardware and software reliability differ in important ways. Hardware failures

are generally a result of a combination of a physical fault and a physical or chemical degradation that progresses over time often as a result of stress, shock or other environmental or operating conditions. Software failures are generally caused by inherent faults that have been present all along and are discovered during operation when a particular path, system state or loading is experienced. Since software failures are physically different from hardware failures, software failures are often called errors or anomalies, since they generally result from an architectural, logical, or coding error, rather than a physical failure¹⁰.

Software reliability events have degrees of criticality like hardware. If the computer locks up and takes two minutes to restart, it may be unimportant and just a simple annoyance. If the problem recurs frequently, the severity of the impact increases. If it occurs just before target launch or just after an enemy missile locks onto your vehicle, it can be catastrophic. A mission reliability failure, whether caused by hardware, software, or their interaction, is still a mission failure.

In developing the tactical CIS, especially the stationary ones, the last generations COTS (commercial off-the-shelf) equipment represent a very good solution regarding qualitative performances, as well as regarding acceptable acquisition costs.

Off-the-shelf (OTS) software, whether it is embedded in a system or purchased as a stand-alone package, poses difficulties in terms of suitability. As much information as possible should be gathered in order to assess the impact of software on reliability, quality and functionality. The following information, some of which could also apply to hardware, should be collected and evaluated: standards used in development; how long the software has been available; the size of the user base; how often new versions have been introduced; whether large companies or standards groups have adopted that software; users of the software should be interviewed to determine their opinions as well as any problems they have encountered; new versions could be examined to determine if they were introduced to add new features or correct defects; experience with faults that resulted in system shutdown or “crashes” should be of prime importance; source language and design tools used; software maintenance information (rationale, methodology)¹¹.

Once a system is fielded, it is important to collect performance data during its operational life. Such data can be used for a variety of purposes including detecting negative trends in reliability in sufficient time to take prompt corrective action. Although positive trends can occur, they are the exception – system reliability usually degrades over time. *Table 2* lists some of the potential causes of reliability

¹⁰ DoD, *Guide for Achieving Reliability, Availability, and Maintainability*, *op. cit.*

¹¹ NATO Allied Reliability and Maintainability Publication (ARMP – 8), *Reliability and Maintainability, Part 8: Procurement Of Off – The – Shelf Equipment*, Directorate of Standardisation, Glasgow, 1992.

degradation and the ways in which that degradation might be addressed. Corrective actions are taken only if safety is concerned or when the benefits outweigh the costs of implementing the corrective action¹².

Cause	Potential Corrective Actions
Premature wearout	Parts may have been inappropriately selected or applied; select higher reliability parts to replace the offending parts; evaluate effectiveness and frequency of preventive maintenance; select different supplier that provides higher reliability parts.
Unforeseen failure modes	Initial description of operating environment and stresses may have been incomplete or inaccurate; review original analyses and conduct additional analyses to determine if any design changes or changes in parts application are indicated.
Higher frequency of failures than forecasted	Initial description of operating environment and stresses may have been incomplete or inaccurate; review original analyses and conduct additional analyses to determine if any design changes or changes in parts application are indicated.
Inadequate training	Training may not have been developed or implemented properly; ensure training is effective and accurate; ensure all personnel, operational and support, receive necessary training before operating or working on the system; ensure all personnel stay up-to-date on system operation and maintenance.
Improper operation	Operating procedures may not have been developed properly, are out of date, or are not being followed; ensure procedures are accurate and up-to-date and all operators are following procedures.
Improper maintenance	Maintenance procedures may not have been developed properly, are out of date, or are not being followed; ensure procedures are accurate and up-to-date and all maintenance personnel are following procedures.

Table 2

At the tactical level where the main communications means are the radio ones, a major problem which affects the stability in functioning of CIS is the use of the electronic attack by the enemy.

The enemy's ability to achieve his objectives and goals during the actions against the above-mentioned systems will depend on the extension of the own forces' defensive measures and on those to minimise the effects of the vulnerability to the executed electronic actions. The use of encryption means to protect the information that cannot counteract the evaluation by the enemy of the means, networks and radio links through the analysis of the specific traffic (volume, number of correspondents, placement, manoeuvre) importance and to use the lethal and non-lethal attack means¹³.

¹² Technical manual, *Reliability Primer for Command, Control, Communications, Computer, Intelligence, Surveillance, And Reconnaissance (CAISR) Facilities*, op. cit.

¹³ L. C. Luca, *Stabilitatea și securitatea sistemelor de comunicații radio strategice*, Scientific research paper no. 4, Universitatea Națională de Apărare, București, 2006.

The radio communications in HF band for direct links are vulnerable to interception and goniometry within the entire area of responsibility of the involved echelons. In goniometry, the accurate results are achieved for the surface radio wave, for small distances. The CIS in VHF band provide small distances links having direct visibility between equipments. They are vulnerable to the goniometry with electronic means that are terrestrial and mounted on aerial platforms. Also, these means are very vulnerable to the enemy electronic attacks.

When developing a tactical CIS, there are some technological constraints that should be considered, namely that, in almost every situation, besides the new purchased systems, with new vehicles and support elements for battle, these must work, at some point, with the existing ones, so that the integration can be very difficult.

The strategy for developing future C3 capabilities is based on the Capability-Based Planning (CBP) approach. While the concept of CBP is key to the identification of required system functionality, the concept of Service Oriented Architectures (SOAs) and a unified communications networking infrastructure is key to meeting those requirements as well as an essential part of the overall strategy. A primary goal of the SOA approach is to make information resources available to all consumers on the network and support the efficient discovery and delivery of that information to the consumer¹⁴. Many SOA approaches in use today presume the availability of reliable, consistently available networks that provide limitless bandwidth and little or no latency¹⁵.

Many factors are important to reliability, availability, and maintainability (RAM): system design; manufacturing quality; the environment in which the system is transported, handled, stored, and operated; the design and development of the support system; the level of training and skills of the people operating and maintaining the system; the availability of materiel required to repair the system; and the diagnostic aids and tools (instrumentation) available to them. All these factors must be understood to achieve a system with a desired level of RAM. During pre-systems acquisition, the most important activity is to understand the users' needs and constraints. During system development, the most important RAM activity is to identify potential failure mechanisms and to make design changes to remove them. During production, the most important RAM activity is to ensure quality in manufacturing so that the inherent RAM qualities of the design are not degraded. Finally, in operations and support, the most important RAM activity is to monitor performance in order to facilitate retention of RAM capability, to enable improvements in design, or of the support system¹⁶.

¹⁴ NATO Network Enabled Capability Feasibility Study, vol. 2, NATO HQ, Brussels, 2005.

¹⁵ MITRE Technical Report, *Tactical Edge Characterization Framework*, Volume 2: Design Patterns for Tactical Environments, 2007.

¹⁶ DoD, *Guide for Achieving Reliability, Availability, and Maintainability*, *op. cit.*

PROVIDING COMMUNICATIONS AND INFORMATION SUPPORT FOR THE ROMANIAN TROOPS PARTICIPATING IN INTERNATIONAL MISSIONS

Colonel Dr Aurel BUCUR
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Romania has a significant contribution in the Afghanistan theatre of operations, which has been gradually developed, ever since the beginning of the conflict. The current spatial configuration of the Romanian forces, as well as the missions assigned and/or assumed in theatre have influenced the dimensions of their support with communications and IT, a process that has required a constant effort at the level of all structures involved.

In this respect, the authors believe that, from the beginning of operations, the support of communication and information systems has been approached on three levels: assuring information flows with the country, with the purpose of maintaining the national command of forces and providing logistic support; assuring command-control information flows in the theatre, with the structures at superior levels of the ones with which our forces cooperate, and assuring command-control information flows within each national structure.

Keywords: *voice networks; Afghanistan; information flows; coalition forces*

The Romanian Armed Forces are now in a full transition phase, which actually started at the end of the *Cold War*, with the aim of modernising their structure, capabilities and decision-making processes in order to meet the new security requirements.

From the perspective of NATO as well as that of the Romanian military authorities, the transition requires the conceptual and structural transformation of forces, a process that will finally influence the nature of the political-military competition as well as the cooperation among the existing security entities at regional and global level.

In this respect, we consider that the conceptual transformation must take place at the same time with the structural transformation of forces, as without a strong military culture and a proper doctrine, the new military forces will not be able to develop the capabilities required by the transformation strategy and will not be interoperable within the NATO and EU-led

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expeditionary operations. As a consequence to that, the development of the new strategies, doctrines and concepts must be at the heart of the conceptual reforms, ideally to follow on the structural transformation of the forces.

It is well-known that the participation in NATO-led or other coalition operations is a key factor for the transformation of the Romanian Armed Forces, which highlights the most valid conclusions over the combat readiness of the forces and a permanent feedback of their support needs.

The missions in which the Romanian Armed Forces participated in the past (after 1990) and the ones they are currently engaged in are characterised by the principle of expeditionary forces, one which has not been addressed by the Romanian strategic and operational levels after the Second World War, although Romania was part of an Alliance (the Warsaw Pact) that was very familiar, in both conceptual and practical terms, to the concept of *expeditionary forces* (see Hungary – 1956, Czechoslovakia – 1968).

The concept of the *entire people's war*, adopted and implemented by Romania in the '60s-'80s period, based on the entire nation's engagement, strongly influenced the development of the military capabilities of that time, which relied on a strong support of the national economy and were characterised by a high degree of territoriality (area of operations, mobilisation, local cooperation with other defence structures).

The transition from the territorial defence concept to the collective security and defence concept, which actually did not happen immediately after 1990, but at the end of the '90s, brought in not only new structures but also new concepts and doctrines. According to them and in line with the participation in multinational missions, the expeditionary forces concept had to be implemented within the Romanian Armed Forces in the absence of any approach at the military scientific level. For a complete overall picture, at the same time, NATO was revising its Strategic Concept and post-Cold War Vision.

To better understand this context and the defining aspects of the expeditionary forces concept, some characteristics are fundamental:

> *Expeditionary forces* are still perceived as an imperialist or colonialist-type activity or as a USA's way of thinking. Many times, *Abroad Operations* (out of national territory) is a preferred terminology and, for some of nations, *Force Projection* is an alternative, mainly to mark the difference from the above perception.

> Expeditionary operations bring two essential challenges for the Alliance: the first is a political one, which addresses the way in which the forces are made available, deployable and sustainable on joint and multinational bases. Despite the fact that there is a wide military component on these aspects,

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this is a political engagement. The second challenge is to ensure the public support for these operations, an aspect which has to be addressed from a strategic prospective.

➤ The strategic environment will always be extremely fluid and mathematically- and statistically-based predictions are not applicable.

➤ The potentially adversaries for the Alliance are more and more numerous and various.

➤ NATO has already developed some structures with limited expeditionary capacities, e.g. the NRF.

➤ The high-level capabilities required by the future expeditionary operations will surely evolve but they are not expected to change significantly. The Network-Enabled Capabilities are part of this process and their implementation will produce the most valuable benefits for the expeditionary forces, widely considered a force multiplier.

➤ The major change will take place regarding the main characteristics of the new capabilities and requirements, such as C3 (command, control and communications), which must ensure a faster transfer of information, a higher bandwidth, an increased level of deployability and sustainability, high survivability against cyber attacks and interoperability with civil agencies.

➤ A stronger link between defence planning and operational planning is required. Some of the NATO's capability shortfalls, such as attack helicopters, strategic airlift, intelligence, surveillance and reconnaissance will eventually be solved by developing long-term capabilities.

➤ The future capabilities for expeditionary forces are not to be seen simplistically, for instance, only through the perspective of the need for lighter weapon platforms with a superior armour or increased strategic transport abilities. The future commander of an expeditionary force must adopt some expeditionary concepts such as "*governance*" or "*urban operations packages*", applicable in case of facing stability operations in failing states or providing assistance for humanitarian relief.

➤ Expeditionary forces will be less focused on *decisive battles* and more on *decisive engagements* with the aim of disrupting enemy's support lines and destroying the capabilities that are considered as a major threat.

➤ Capabilities' build-up must be done in accordance with the missions and tasks envisaged for the operation and the military analysis process will definitely have to take place prior to the political decision.

➤ Enhanced cooperation with other international key actors (e.g. UN, EU, OSCE) is of paramount importance, including but not limited to operational consultation during all the phases of the operation, exchange of critical information, lessons learned and interoperability standards implementation.

> Within NATO, expeditionary forces and operations are at the heart of transformation and we consider that these concepts make the Alliance more powerful and relevant in facing the security challenges of nowadays. In addition, the concepts proved in many occasions to be the operational glue to stick the partnership.

> To increase efficiency of their forces at the time they are be integrated in NATO-led operations, nations must implement NATO standards and procedures. We strongly believe that nations must focus their efforts to build-up those capabilities that will provide the highest impact on the overall effectiveness and interoperability such as command and control, information gathering and sharing.

We consider that it is relevant to address these conceptual aspects, which are fundamental for the current Alliance's operations and to bring into consideration the actual premises based on which the Romanian Armed Forces participate in the theatres of operations, as well as to highlight the combined efforts that have been made by the Ministry of National Defence's structures to ensure capable national forces to participate in operations.

The CIS support for Afghanistan theatre of operations

It is well-known that in the Afghanistan theatre of operations, Romania has a significant troop contribution that has gradually developed since the conflict started. The level of their CIS (Communications and Information Systems) support has been influenced by the current configuration of the Romanian forces and their assumed and assigned missions in the theatre of operations, a process that has required a constant effort from all the structures involved.

In this context, even from the beginning of the operation, the CIS support has been approached on three levels:

- Providing the information flow between the theatre of operations and the national military authorities through classified and unclassified networks to ensure the national control of the forces and to facilitate the logistic support.
- Providing the in-theatre command and control information flow with the upper levels and for cooperation.
- Providing the internal command and control information flow for the national structures.

At the beginning of the mission, the size of the national structures was smaller (team, platoon up to a maximum of company) and the CIS support within the first level mainly consisted in radio HF links and commercial satellite communications (INMARSAT, IRIDIUM). In addition, the existing connectivity between *Rețeaua de transmisiuni permanentă – National Permanent Network (RTP)* and NATO Communications Network extended at the theatre level was used for voice communications.

When the first manoeuvre battalion was deployed in the theatre of operations, it was clear that an integrated CIS solution was required to increase the autonomy and the diversity of services. The solution, *Modulul de comunicații și informatică dislocabil – Deployable Communications and Information Module (MCID)* project was implemented, providing the theatre of operations with extensions of the following services available in *Rețeaua militară națională de comunicații – National Military Communications Network (RMNC)*:

- Voice, in classified and unclassified environments.
- Data, in classified and unclassified environments.
- VTC, classified level.

The extension of these services is based on a military satellite channel (Sicral 1B) contracted with the Italian Armed Forces provider. When the available capacity permits, social links for Romanian personnel can be provided (phone calls through RTP and commercial Internet).

As the national contribution for Afghanistan increased and the missions became more diverse, it was required that more MCIDs were acquired, five pieces of equipment being currently deployed there (see *figure 1* for details). It must be mentioned that this solution can be used also in the case of deploying military structures characterised by a high level of autonomy and isolation on the national territory.

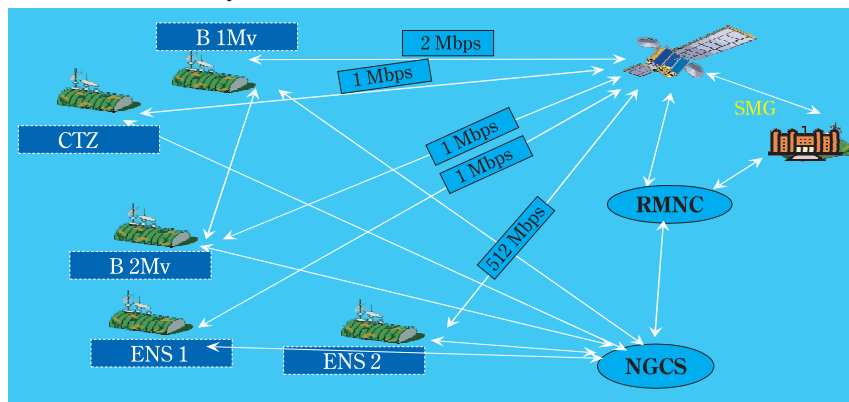


Figure 1: Organisation of Multichannel/RTP/RMNC/NGCS Communications with the Theatre of Operations

At the second level, providing the in-theatre command and control information flow with the upper levels and for cooperation is aimed at ensuring the mission specific needs for the operational control. The transfer of authority and the process of taking over the operational control of the Romanian forces by the coalition command structures require the implementation of permanent communications links, voice and data that are highly secured.

After these activities are completed, the execution of any mission implies strong links between the coalition forces, both vertically and horizontally, in order to support the decision-making process.

The communications and information services made available in order to meet command and control requirements seek to provide the entire combat loop, from the upper levels down to the soldier level. A large diversity of secured communications means are needed for every mission, ranging from tactical radios (VHF and HF) to military tactical satellite (TACSAT) and commercial satellite (IRIDIUM). Nevertheless, the local commercial GSM network can be used in case of emergency. As a rule, every commander will have at least three alternatives for command and control anytime in a mission, a prerequisite that offers a great flexibility for manoeuvre and higher degree of protection for his troops.

Current major interest issues specific to theatre CIS are now passing from the interoperability assurance area, and as direct result of our involvement in *Combined Endeavour*, *Steadfast Cobalt*, *CWIX* etc. in the financial responsibility area. In this respect, taking into account that link assurance principles are the same for every nation (e.g. superior echelon responsibility for subordinate link assurance), there are many situations in which coalition network funding (such as the Afghan Mission Network – AMN) does not provide full coverage for the participating structures. This involves a financial effort from the nation that generates, deploys and sustains the force into the theatre, with supplemental support arrangements, such as those specific to operational entities coordinated by a lead nation.

The communications and information system organised together with subordinated units and the ones that cooperate is provided in accordance with the main CIS documents, as OPCON. The only element that could be discussed is the ISAF/NATO accreditation aspect, not because of the clear national and international procedures, but because of the ROU experience in assuring the legal frame for a national system accreditation in order to be linked to a similar security level coalition system.

On the third level, to ensure the command and control national specific information flow, the generating force nation is responsible with building the communications and information system. In this respect, necessary CIS means and equipment types are identified by the force management documents, keeping in mind that after mission completion, the generating force who made available the structure/detachment could complete/reorganise the mission's necessary equipment types in accordance with updated operational requirements of the theatre of operations.

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The specific templates (networks, directions, points of presence), through specific voice/data, encrypted or plain text categories, in support of specific missions, are in direct connection with what needs to be provided for the viability of information flows, as the superior echelon stipulated in the OPCON. Those should be able to submit all the mission critical information to the subordinate structures in real time.

In the specific case of the Romanian forces in Afghanistan, this level is mostly covered by the USA support of the fighting structures with battle stations (HUMMVEE and MRAP) evenly equipped with satellite tactical capabilities (TACSAT), HF and VHF radios, awareness equipment such as *Blue Force Tracking*, and electronic countermeasures against improvised explosive devices. More than this, through the national effort, the structures have been equipped with variable power HF and VHF radios, in support of the mission command and cooperation links. For specific situations, commercial network terminals INMARSAT, IRIDIUM and ROCHAN are ensured.

To summarise at this level, we should highlight that for each Romanian patrol in missions outside the deployment area there are provided at least five different communication means, which is beyond the current possibilities of the structures on the national territory.

The current real CIS support for the Romanian forces deployed in Afghanistan reveals a major dependency on USA support in order to assure the second level. We believe that the above status will not be improved in the near future without the proper investments in the Land Forces, especially in tactical operation command centres (TOC) for the deployed battalions, which must be developed, and have the technical and procedural capability (including the area of security accreditation) so that they could become interconnected with the coalition networks.



ISLAMIC COUNTRIES MODERNISATION PROCESS AND INFLUENCES ON GLOBAL SECURITY

Colonel (r.) Eugen LUNGU

Modernisation in the Islamic world, from the perspective of the political life, according to many Western authors, is aimed at changing the political systems that govern the Islamic states and at adopting the Western model, the liberal democracy. However, the passing of Muslim societies with deeply rooted cultural and religious traditions to another type of political-economic-social organisation, in which the values specific to liberal democracies prevail, is not an easy process, the social turbulences not being totally eliminated from this approach.

In the end, the effects of the Islamic world on global security are pointed out, succinctly referring to the problems existing in three Islamic states: Turkey, Iraq and Afghanistan in order to better reflect the relation between modernisation and security in the Islamic world.

Keywords: *modernisation theory; traditionalism; Muslim world; liberal democracy; global security; universal civilisation*

Theoretical Aspects of Modernisation

Historians have stated that the “*theoretical line*” regarding modernisation originates with Aristotle’s thought, the first one who suggested that states have a natural rising tendency, similar to the line followed by plants. However, we find the foundations of modernisation theory in the Age of Enlightenment, when some philosophers began to reflect on how human society changed and progressed. Closer to today, Americans in the early Republican era believed (as Aristotle did) that if societies grew naturally, they also fell into a stage of decay. In the past century, modernisation was generally perceived as a process that belonged only to the Western world and that non-Western societies would follow only if they abandoned their traditional cultures and assimilated the technological way and the Western “*morality*”. In the first stage of the period after the Second World War, approximately twenty societies were considered as having a high degree of modernisation,

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and approximately ten to twenty of them were noted to have crossed a threshold that put them on “*the path to modernisation*”. Thus, in the second half of the last century, some non-Western societies surprisingly overcame that “*level*” of modernisation that enabled them to be compared to Western states. An example was East Asia, which reached the highest growth rate in the world. Moreover, using the official exchange rate, Japan had the highest income per capita compared to any major nation worldwide, held primacy in the world production of automobiles and consumer electronics and had the highest life expectancy in the world.

Modernisation is seen as a process that has been defined and interpreted quite varied. Some definitions have noted the structural features, such as the level of education, urbanisation, non-renewable energy sources and fertility. Others have been related to attitudes, such as secularisation, orientation towards innovation, specific of the organisation and functioning of formal organisations and acceptance of equality in inter-human relations. Here is a comprehensive definition of modernisation: “*a cultural, economic and social process that transforms pre-industrial society into an industrial one. These changes were mainly caused by technological advances that increased economic productivity and significantly changed social lifestyle*”¹.

Cyril Edwin Black, sociologist at Princeton University, defined modernisation, in the '60s, as “*the process by which historically evolved institutions are adapted to the rapidly changing functions that reflect the unprecedented increase in man's knowledge, permitting control over his environment that accompanies the scientific revolution*”². Moreover, one of the leading theorists of modernisation, Samuel P. Huntington, in one of his works, *Political Order in Changing Societies* (1968), defines modernisation as “*a multifaceted process involving changes in all areas of human thought and activity*”.

Modernisation theory has had a tremendous impact on history, political science, sociology, the thought about capitalism in competition with socialism, the Western states, considered initiators of modernisation, as well as the less developed countries. Sociologist Lazăr Vlăsceanu presents the historical context in which modernisation theory was launched as a “*part*” of development theories: “*The period in which modernisation theory was promoted was however dominated by Western nations and especially the US, while the Third World, of the developing countries, was not yet seen as an important political actor on the international scene*”³. However,

¹ At <http://www.scribde.com/sociologie/asistenta-sociala/SCHIMBAREA-SOCIAL10119231824.php>

² Michael A. Palmer, *Ultima cruciadă. Americanism versus Islamism*, Editura Curtea Veche, București, 2010, p. 11.

³ Lazăr Vlăsceanu, *Politică și dezvoltare. România, încotro?*, Editura TREI, București, 2001, p. 36.

a basic concept of modernisation theory remains valid today: industrialisation can bring about universal social and cultural effects, from higher levels of education to change of genre roles. From this perspective, industrialisation is seen as the central element of the modernisation process that affects many other aspects of society. Today, according to experts in the field of development, there are dozens of advanced industrial societies and almost every society in the world today is at a certain stage of industrialisation. *“Modern society – Constantin Schifirneț states – established change as a guiding principle of social evolution. Compared to the old society – the feudal or patriarchal one –, the new type of company is focused on capitalising on the human being and groups capacity to reason, to organise social life on rational bases. The liberation of the human being from the servitude of the addiction to the other, the free will to decide upon personal capacities, the organisation of relations between people on the principles of rational knowledge are elements of the modern way of thinking”*⁴.

The studies on modernisation theory generally consider that this theoretical approach is oriented towards three directions: 1. Identifying the types of societies and explaining how these modern or relatively modern societies differ from one another. 2. Explaining how the societies are modernising and comparing certain factors that are more or less favourable to this transformation. 3. Generalising the way in which the *“elements”* of modernised society harmonise together, involving comparisons of the stages of modernisation, types of modernised societies and prospects of future modernisation. One may say that, relating to these theoretical *“elements”*, not all modern societies have had the same success, because of differences in the performance of economic, political, social etc. institutions. At the same time, modernisation theory outlines those *“models”* towards which the non-modern states should evolve: *“the developed (Western) world is the modern one and, following its example, it may be defined an idealised model of development that should be copied in order to escape the traditional status of underdevelopment; domestic (economic, social, cultural, political) conditions of developing countries do not facilitate, they actually block development; that is why, in addition to copying the model, the foreign aid in the form of infusion of capital is needed”*⁵.

It is a well-known fact for those studying the phenomenon of modernisation of human societies that research on the socio-economic development has given birth, in recent decades, to two competing schools of thought. One of them emphasises the convergence of values as a result of *“modernisation”*, meaning that economic

⁴ Constantin Schifirneț, *Formele fără fond, un brand românesc*, Editura Comunicare.ro, București, 2007, p. 256.

⁵ *Ibid*, p. 36.

and political forces lead to cultural change. This school predicts the decline of traditional values and their replacement with modern values. The other school of thought points out the persistence of traditional values despite economic and political changes. This school assumes that values are relatively independent of the conditions and changes of the economic factor. Consequently, it predicts that convergence around a particular set of “*modern*” values is unlikely and that traditional values will continue to independently exercise influence on the cultural change caused by economic development.

It is important to note that, in accordance with the theoretical approaches promoted by specialists in the field of development, modernisation theory places the domestic factors at the heart of the causes that determine the underdevelopment of a country, these factors being found in the political, economic, social, cultural etc. life. Thus, underdevelopment is seen as a direct consequence of the domestic characteristics of a country: traditional economy, traditional psychological and cultural features, as well as traditional institutions. From this perspective, traditional values are not only transformable, but they can and should be replaced with modern values, enabling these societies to follow the (almost inevitable) path to capitalist development. At the same time, a state can leave behind the underdevelopment phase, namely replacing tradition with modernity and achieving superior performance at the political, economic, social etc. levels through the action of factors that are exogenous to the respective societies. Agencies of “*intervention*” in the process of development have been identified as being “*the rich*”, the developed nations that stimulate the modernisation of backward countries through economic, cultural, military etc. assistance.

Currently, modernisation is analysed and interpreted in a relationship that is “*close*” to globalisation. Thus, one can speak, in terms of theoretical thinking, of a certain “*opposition*” between the supporters of modernisation theory and those of globalisation theory. It is well known that, in the first decades after the end of the Second World War, modernisation theory had a strong influence on social sciences, but, since 1990, according to experts, the globalisation theory has gradually become the most important theory that affects today the disciplines related to social sciences all over the world. Given the position of globalisation theory, today, modernisation theory is “*compelled*” to increasingly move towards the way in which the new technologies and systems lead to a more homogenous world. The globalised world is taken into account in this respect, in which the cultural habits and ideas are much easier to spread worldwide, leading to a sort of “*universal civilisation*”⁶. In addition, we must say that today’s modernisation

⁶ Samuel P. Huntington, *Ciocnirea civilizațiilor și refacerea ordinii globale*, Editura ANTET, Oradea, 1998, p. 80.

theory often refers to globalisation in critical terms, analysing its negative consequences. For instance, some specialists in modernisation theory show that globalisation can lead to greater differences between the rich and the poor and could worsen the living conditions of millions of people. However, despite the differences in approach, specialists consider that the two theories are complementary.

Modern Western societies today, especially the Western culture, which is intended to be a genuine “*export product*” towards the non-modern world, have not been spared the “*birth*” of very vocal critics, the true defenders of traditional societies. One of these authors – René Guénon – in a paper entitled “*The Crisis of the Modern World*”, written more than half a century ago, arguably and convincingly addressing the issues of traditional doctrines, Eastern and Western ones, reaches an uncomfortable conclusion for the West: “*the beginning of the fall of modern Western world*”. Thus, Guénon is convinced that, like any other civilisation that prevailed in certain historical periods (the Greco-Latin civilisation, the Persian civilisation, the ancient Egypt civilisation etc.), the Western civilisation will also go into decline and be replaced with another civilisation: “*Disorder and confusion prevail in every domain and have been carried to a point far surpassing all that has been known previously so that, issuing from the West, they now threaten to invade the whole world; we know fully well that their triumph can never be other than apparent and transitory but such are the proportions which it has reached, that it would appear to be the sign of the gravest of all the crises through which mankind has passed in the course of its present cycle*”⁷. We believe that this thesis of “*the fall of the modern West*”, as well as other theories that criticise from a position or another Western culture and way of life cannot be circumvented “*in haste*” or mechanically considered as being “*theoretical products*” that are anti-modernisation. We believe, though, that the natural trend of “*adjustments*” in the modernisation theory should be reflected in the “*absorption*”, at theoretical level, of those elements that are related to the dynamics of the globalisation process, as well as the critical analysis of the anti-modernisation “*theoretical excesses*”.

Traditionalism and Modernisation in the Islamic World⁸

There are many authors who argue that the modern world today has a highly visible feature, namely the division between East and West. René Guénon, trying to describe the civilisation differences, points out that, over the millennia, there have been various civilisations that have developed consistently with the skills

⁷ René Guénon, *Criza lumii moderne*, Editura Humanitas, București, 2008, p. 43.

⁸ We will further use the syntagms “*modernisation in the Islamic world*” and “*modernisation of Islamic states*”, taking into account all Islamic states that are not considered modern states in the specialised

of nation or another race, but the differences between them have not caused them to be in opposite positions, one against the other. These are the traditional civilisations based on the same fundamental principles, among which there are no obvious oppositions, and any contradictions can be dealt with. *“In the present state of the world – states René Guénon – we have on the one hand all the civilisations that have remained faithful to the traditional standpoint – namely the civilisations of the East – and on the other, a veritably anti-traditional civilisation, namely that of the modern West”*⁹. Although once there were traditional civilisations even in the West, however, the fact that oriental civilisations maintain now their traditional character, and the modern West does not “store” the specific features of traditional civilisations, generates, at the spiritual level, this visible opposition between the East and the modern West. Therefore, what is important to note is that this objection does not refer to geographical entities, groups of states etc., but to the spiritual dimension, namely, somehow simplifying, to the obvious difference between the Eastern thinking and the modernism of the Western world. Referring to the types of civilisations, Huntington makes an absolutely original differentiation, placing the religious criterion to the central point of his well-known classification: the Western civilisation, the Orthodox civilisation, Latin America (a combination of Western civilisation and local population), the Muslim civilisation, the Sinic civilisation, the Japanese civilisation, the Hindu civilisation and the sub-Saharan Africa civilisation.

The analysis made by Mark Sedgwick about Europe regarding the separation, centuries ago, of the Catholics and Protestants, followed by the attempt to find some elements of comparison with the Islamic world, leads to an interesting conclusion: that in the Muslim world in the second half of the 19th century it did not happen a division of the Muslim on regions, but on classes, in “modern” Muslims and “traditional” Muslims. From this perspective, Sedgwick argues that in the Muslim world *“the educated inhabitants of our cities today are generally followers of a quasi-protestant, reformed Islam, which I call modern, while less educated people in rural areas are generally proponents of the old, traditional Islam”*¹⁰. It would be wrong to imagine that between the supposedly modern and the traditional Muslims from the Muslim states there is a pronounced antagonistic situation that could degenerate into chaos and social disorder. But this reality should be regarded from the point of view of the action of the political factor, because,

literature (for instance, Malaysia is not included in this category, being a state in which more than 60% of the population practices Islam, but it is considered to be modern).

⁹ René Guénon, *op. cit.*, p. 48.

¹⁰ Mark Sedgwick, *Islamul și musulmanii*, Editura Niculescu, București, 2010, p. 57.

as stated by numerous authors, modern Islam lays stress on society, often having a political character, while traditional Islam has never been particularly political. With this in mind, we believe that the way in which the relationship between modern and traditional in the Islamic world will evolve represents one of the sensitive “elements” of the renewal process of the Muslim community, a process the Western communities expect to be more articulate and adapted to the general trend imposed by the globalisation of the current world. Therefore, as I said before, one cannot speak of a violent relation between modern and traditional Muslims: “*Conflicts in the Muslim world do not take place between traditional and modern Muslims, but between factions of modern Islam and the state*”¹¹. These two categories of Muslims have a normal relationship within the Islamic societies, even though each has specific arguments that they consider viable to preserve their cultural and religious identity: “*Traditional and modern Muslims generally live happily with each other. In many countries, for instance, the manager would be a modern Muslim, and the one who makes the tea would be a traditional Muslim. Each considers the other as being Muslim, but the modern manager sees the one who brings tea as a superstitious and ignorant person, while the traditional Muslim who brings the tea believes that the manager does not understand some very important things in life*”¹².

Modernisation in the Islamic world, from the perspective of political life, in the opinion of several authors in the Western world, is aimed at changing the political systems that govern Islamic states and at adopting the Western model of liberal democracy. Obviously, such an approach, according to the same experts in political science, can be taken in stages, throughout several years, having, from many standpoints, the example of the way in which Iraqi political life has transformed and is developing currently. For example, the Arab world, as an important part of the Muslim world, is faced, more often than not, with movements that take the shape of Arab nationalism, anti-Americanism, anti-Semitism and religious fundamentalism, realities that do not make easy any serious intention to change something in the “*political physiognomy*” of these countries. “*The Arab world today – reckons Fareed Zakaria – is trapped between autocratic states and illiberal societies; neither of them fertile ground for liberal democracy. The dangerous dynamic between these two forces has produced a political climate filled with religious extremism and violence*”¹³. From the viewpoint of the political structures existing in the Arab states,

¹¹ *Ibid*, p. 58.

¹² *Ibid*, p. 57.

¹³ Fareed Zakaria, *Viitorul libertății – Democrația neliberală în Statele Unite ale Americii și în lume*, Editura Polirom, Iași, 2009, p. 107.

at the institutional level, as well as at the one of the public participation in political life in accordance with the fundamental human rights promoted by the UN, the Arab world is now in a “*position*” that is considered unacceptable by the advanced democracies of the Western world: “*The Arab world is a political desert, with no real political parties, no free press, few pathways to dissent. As a result, the mosque has turned into the place to discuss politics*”¹⁴. It is also well-known, from the work of renowned political scientists who have studied Muslim communities, that the Islamic governance model, based on precepts of the Qur’an, is authoritarian. This reality of the Islamic world is not new, historical data of the 19th century and early 20th century mentioning that Islam is a religion that encourages authoritarian leaders. We can provide an explanation in this direction, namely that in Islam, over time, as the institution of Tsar in Russian or the one of Emperor in Japan, a true “*tradition*” of obedience to a generally recognised authority has developed. For example, it is possible for the obedience to the sultan of the Ottoman Empire, which had “*in subordination*” several hundreds of millions of Muslims during the height of the Empire’s conquest, as well as the institutional and psychological mechanisms of this kind of authoritarianism that have developed over time, to have caused certain behavioural reflexes among the Muslims towards the ones in power. Therefore, we have reasons to believe the following statement is true: “*Islam has a visible authoritarian feature in any Muslim country in the world today (...). Obedience to the leaders (a requirement that appears in some of the Prophet Muhammad’s hadiths, A./N.) is compulsory for Muslims only if their commandments are compatible with the law of God*”¹⁵. In fact, if we consider the approach the French political scientist Jean Baudouin has on authoritarianism¹⁶, we can easily notice that the two types of authoritarianism the author suggests – that of patrimonial domination and modernising authoritarianism – are very common in the Islamic world. In the case of patrimonial domination, a form that is rooted in the patriarchal principle, power belongs to a traditional ruler, who commands at home and, while performing his duties, he has a “*managerial relationship*” as from master to servant. There is, in this case, a large ambiguity in exerting political and economic roles, and a clear mix between “*public*” and “*private*”, particularly as far as the financial and material resources used are concerned. In turn, modernising authoritarianism presupposes that “*path*” through which some political leaders choose an authoritarian manner to cause a process of political, social, economic and cultural modernisation, from the highest political level to the basis of the society. “*Turkish Kemalism*

¹⁴ *Ibid.*, p. 125.

¹⁵ *Ibid.*, p. 109.

¹⁶ Jean Baudouin, *Introducere în sociologia politică*, Editura Amarcord, Timișoara, 1999, p. 173.

– underlines Jean Baudouin – *provided a long-term modernising authoritarian archetype. After 1923, Mustafa Kemal converted the ruling elites towards a policy of very drastic reforms: the brutal secularisation of society, the construction of a national identity articulated on a new language and alphabet, the equality between men and women etc. Purpose: the brutal modernisation of Turkish society, the promotion of a rational individual freed from the constraint of the community*¹⁷.

The modernisation of the Islamic world today is obstructed, as mentioned earlier, by the authoritarian regimes existing in many Muslim countries that do not support the idea of political opposition, within the sense assigned by liberal democracies, as well as by the Islamist movements that promote a return to the traditional values of Islam and, to a certain extent, by the Islamic fundamentalists who are a minority in Islamic communities. Mention should be made that, in the years following the Second World War, the secular regimes established in many Islamic countries, in fact real authoritarian regimes, same as the military regimes and the monarchies in states like Saudi Arabia, Morocco and Jordan, despite promises and “*generous initiatives*” often supported policies that did not lack repression, demagogy and placing the blame on foreigners for the lack of economic and social performance. Unlike non-Islamic states elsewhere in the world – South-East Asia and South America, which have chosen the path of political modernisation, have implemented the principles of free market and have connected the respective societies to the process of modernisation required by the imperatives of globalisation, much of the Islamic world states have remained outside these evolutions, required more and more by the global society the Muslim world is also part of. We believe that today the high stake of the Muslim societies is represented by choosing between an option towards modernisation, such as Turkey, or towards militant Islamism as a way to govern society, such as Iran, since 1979. It is true that “*Islamist revival movements gained followers across the Muslim world, but failed to secure political power except in Iran and Sudan. In Algeria, where in 1991 Islamists seemed almost certain to win power through the ballot box, the military preempted their victory, triggering a brutal civil war that continues today*”¹⁸.

As we have seen in Iraq, the “*modernisation*” of political life, reflected in the creation by the Iraqi authorities of laws, rules, political norms and institutions nearly close to the “*models*” of the Western world, is a process that takes place rather slowly, with many gaps, and with many violent ethnic and religious accents. We believe that the enormous difficulties in Iraq, which, in the opinion

¹⁷ *Ibid*, p. 175.

¹⁸ 11 septembrie 2001 – *Raportul final al comisiei americane de anchetă privind atacurile teroriste asupra Statelor Unite ale Americii*, Editura Alfa, București, 2006, p. 67.

of more and more authors, are likely to lead to a failure of the US policy of democratisation of this Arab country, are related to the underestimation of a truth expressed with clarity by Oliver Roy: *“Democratisation corresponds, indeed, to a popular demand”*¹⁹. The natural question that arises after this statement, which we consider trustworthy, is whether the Iraqi people truly believe in the Western-type liberal democracy and if Islamic traditionalism, intrinsic to the Muslim world, *“moulds”* easily, without antagonism, to a new model of political organisation of the Iraqi society? The fact that the import of Western-style democracy does not necessarily mean a gain for any type of country is a cause for concern to political science specialists.

The current analysis of the daily lifestyle of Muslims in various Islamic communities, of their leisure habits as well as of other aspects that are somehow specific to non-Islamic societies considered to be more evolved in terms of civilisation, leads to an important conclusion formulated by some specialists in the evolution of contemporary social phenomena, namely that the Muslim world is not organically against the Western culture and lifestyle, therefore it is an adversary of modernisation. At the opposite pole, of course, there are those authors, both from the Muslim world and the Western one, who state that between the Islamic world and the Western one there are fundamental differences and, even if the respective Muslim communities accept certain elements of the Western culture, however, the modernisation of Islamic societies through the assimilation *“on the whole”* of the system of values specific to the Western world is certainly a utopia.

Our opinion is that, despite the strong traditionalism that characterises contemporary Islam, modernisation in the Islamic world will continue to advance in many Islamic states, a process that is visible especially in its economic dimension, enhanced, of course, by the forces of globalisation. The effects of modernisation are beneficial both in the short and long term, yet, the apologists for the modernisation theory warn us about its social as well as psychological consequences, which, in certain circumstances, *are presented at the forefront of anti-modernisation theories: “Most Westerners consider many of the aspects of modernisation (though perhaps not all) as positive, each of them implying, to a greater or lesser extent, certain real cultural trauma”*²⁰. From this perspective, it is hard to imagine, within the Muslim communities that are subject to modernisation, that many young Muslim men and women will not choose, professionally, the path followed by their parents and that, during the active life, these young people will have to adapt to the needs required by the labour market, to follow

¹⁹ Oliver Roy, *Semiluna și haosul*, Editura Nemira, București, 2010, p. 34.

²⁰ Michael A. Palmer, *op. cit.*, p. 11.

more and sometimes very different professions. By comparison, today, young Westerners are almost certain that they will not embrace a single career for their entire life. Therefore, the transition from Muslim societies with deeply rooted cultural and religious traditions to another type of social-economic-political organisation, in which the values specific to liberal democracies are dominant, is not an easy process, the “algorithm” of such a “movement” being a highly debated topic by experts in the field of political science, with social turmoil still part of such an approach. This is what Libyan reformer Dr Muhammad al-Houni says about the variants the Arab states can choose for their future development, options we also believe valid for non-modernised Islamic countries: “Arab societies have only two options: either to sever their ties with the Western civilisation and its cultural institutions and to continue to harm themselves ... or to irrevocably sever their ties with the religious legacy of the Middle Ages, in order for their philosophy to be a philosophy of life and freedom, and not one of death and hatred”²¹.

Modernisation in the Islamic World and the Effects on Global Security

Global security strategies, as they have been designed by specialists in this field for the previous ten years, have certainly been influenced by the action of insecurity-generating factors that are rooted in some states of the Islamic world. The terrorist attacks claimed by Islamist terrorist organisations starting with the ones on 11 September 2001 against the US, followed by those that took place in Spain, France, the UK and Russia, the wars in Afghanistan and Iraq, the unresolved complex problems in the Middle East, the social conflicts and turmoil in some Muslim countries between different ethnic and religious communities are elements that support the previous statement, namely that the Muslim world continues to include broad areas with a low degree of security. In fact, according to the theories that are widespread in the Western world about Arab states, the responsibility of the West regarding the causes of violence is ruled out, a belief that is supported by American neoconservative groups of the George W. Bush Administration: “According to them (the neoconservatives, A./N.), the source of this violence lies in the structural delay of (human, political and economic) development of Arab societies”²².

The modernisation of Islamic countries, a theme that has joined together many spirits in the debates in Western academic circles, as well as important Muslim intellectuals, is considered in the West as a safe way through which Muslim

²¹ *Ibid*, p. 220.

²² Oliver Roy, *op. cit.*, p. 26.

states can become entities with a high security degree, compensating this way for the security deficit that exists at global level and is caused by the action of insecurity-generating factors that are endogenous to the Islamic world. Even if we deal with different opinions in the Western world regarding the “organic” ability of Islamic countries to modernise, some theorists loudly stating the idea of the inability of the Muslim world to assimilate the “package” of social-political and economic values to promote on the path towards modernisation, we consider that the Muslim world can gradually achieve those values of the modern world to bridge the now existing gap between the Western world and most of the Muslim world. Thus, “most Muslims’ daily lives do not confirm the idea of a faith that is intrinsically anti-Western or anti-modern”²³.

It is very well-known that not all Islamic states reject modernisation, in the sense in which this concept is understood in the Western world, but, at the same time, in the Muslim world we are dealing with states that consider modernisation as a “matter” that is exclusively connected with the implementation of Islamic values and lifestyle. Analysing the specialised literature on “modernisation in the Islamic world”, we consider there are several categories of states that can be outlined: 1. Modern Islamic states (Malaysia). 2. Islamic countries that have gone through several stages of political-economic-social modernisation and are situated on an ascendant trend, towards the democratic values of the Western world (Turkey). 3. Secular authoritarian regimes, in which the Islamic traditionalist spirit prevails and Western democratic values are found in a small proportion (Egypt). 4. Islamic states with a high level of economic development, but dominated by a “political Islam” that has nothing to do with Western democratic values (Saudi Arabia). 5. Islamic countries that have embarked on the path of modernisation and democratic transformations as a consequence of the assistance granted from the states of the international community (Iraq). 6. Fundamentalist Islamic states (Iran). 7. Islamic states with a very precarious security situation, in which government institutions function at low parameters (Sudan).

To better reflect the relationship between modernisation and security in the Islamic world, we would like to further approach, briefly, the problems existing in three Muslim countries: Turkey, Iraq and Afghanistan. Thus, it is well-known that Turkey, a country with a majority Muslim population, is the Islamic state that is most “connected” to the European continent, through its geographical location, even partial, as well as through the fact that it joined the “Euro-Atlantic world” as far back as 1952: “Then there is Turkey, the fifth-largest Muslim population in the world. It has a flawed, but functioning liberal democracy. It is a member

²³ Fareed Zakaria, *op. cit.*, p. 111.

of the North Atlantic Treaty Organisation and perhaps soon will be a member of the European Union”²⁴. Turkey had the historic chance of Kemalism launched in the third decade of the last century, a process that meant an early stage of the modernisation of the Turkish state and society. Nevertheless, the current stage that Turkey goes through with the declared intention to join the EU is clearly a new step on the path of its modernisation, even if, immediately after 2002, when the Islamist-oriented AKP party came to power, there were some reservations on the part of the European cabinets regarding the “European path” of this Muslim country. Moreover, as Pierre-Jean Luizard reckons, as well as other key figures in European politics after 2002 do, “AKP has practically covered so far a faultless path towards the democratisation of Turkey and towards Europe”²⁵. The new stage of modernisation of the Turkish state, reflected in the democratic reforms that followed 2005 due to EU requirements, meant causing important changes in the political domain, human rights, justice, the military, as well as in the Turkish society. The approval by the Turkish citizens, through a referendum, of the package of constitutional amendments (with a 58% positive score), in September 2010, is part of this path, namely of the continuation of Turkey’s modernisation, a process that will take into account the community standards required by the EU institutions from all candidate countries. In fact, specialists in European integration consider that Turkey’s path towards the Union will not be any easier: “Turkey’s integration in the European Union will not be considered unless it renounces its unitary Turkish dogma and it is committed to respect pluralism. That would mean the recognition of Muslim minorities, particularly the Alevis, a separation of Islam from the state, as well as the Kurdish rights, the recognition of the Armenian massacres etc.”²⁶. Therefore, the further modernisation of Turkey on the path towards the European Union has numerous intermediate integration objectives, some of them unambiguously referring to the domain of state security, as well as having “resonance” at the regional level²⁷. We believe that, as far as Turkey is concerned, the evolution of the relation between modernisation and domestic security/regional security could be expressed through the following possible “developments”: the Turkish state will continue the process of modernisation in the political, economic, social etc. domains, in accordance with the integration objectives set by the EU institutions; Turkey will gradually meet the European standards on minorities, which will lead to the annihilation of insecurity- and internal instability-generating factors;

²⁴ *Ibid.*, p. 111.

²⁵ Pierre-Jean Luizard, *Modernizarea țărilor islamice*, Editura Artemis, București, 2008, p. 208.

²⁶ *Ibid.*, p. 210.

²⁷ “The Kurdish issue” focuses on the 32 million Kurds spread in Turkey, Iran, Iraq and Syria.

the further modernisation of the Turkish state will give a positive impetus to other Muslim countries in the region; Turkey will continue its intense pace of economic development (a real zonal “*champion*”), leading to its transformation into a regional power; the Turkish state will solve the problems mentioned in the EU negotiation chapters regarding the “*Cyprus issue*”, which will lead to the recognition by Ankara of the Republic of Cyprus and the increase in the stability in the Eastern Mediterranean Sea.

As for Iraq and Afghanistan, we can say that the processes of modernisation began rather slowly, through reform measures implemented by the two states that received assistance from the international community and particularly from the Western states, even if the phenomenon of belligerence has not been stopped yet. There is obviously a difference between the two countries in terms of “*domestic conditions*” to implement some modernisation measures, meaning that if the war in Iraq ended in September 2010, according to Barack Obama’s official declaration, the war in Afghanistan will last approximately until 2012, according to US experts predictions. All these processes that were also aimed at a renewal of political, economic, social life etc. took place quite shyly in the early first years, simultaneously with military operations, and continued in both countries, with difficulties and violent confrontations, especially in Afghanistan, between the Taliban forces and the multinational coalition. If we were to reflect now on some “*scenarios*” of possible developments, both in Afghanistan and Iraq, considered by the Washington Administration before the onset of the two wars, we would easily realise how far from the truth those predictions were: “*The people, the Afghan as well as the Iraqi one, would set the wheels in motion in two or three years for a viable democracy and strong institutions. (...) The other nations – Iranian, Syrian and Palestinian and Saudi ones – envious of the Iraqi development, would get rid of existing regimes or, at least, would make several reforms. Without fighting with each other, all democracies would recognise Israel, whose security would then be guaranteed by this democratisation of the Arab countries. Terrorism would not be an option anymore*”²⁸. It is indeed a scenario, as simply designed as unlikely, that has wrongly overestimated the attractiveness of liberal democracy for Muslim communities, without considering the strong traditionalism of the Muslim world perceived quite differently in the Western political space. Both Afghanistan and Iraq have demonstrated that they have a “*nationalist potential*” that is very well articulated to the Islamic religion, despite the heterogeneous ethnic structures existing in the two Muslim states. This nationalism, with a “*touch*” of regional pan-Islamism, collided

²⁸ *Ibid.*, p. 35.

with those renewal measures of the Muslim societies seen as steps for “forced modernisation”, supported by foreign military forces within the territory of both states. We are talking of a nationalist trend, primarily in the case of Iraq, starting from the fact that, despite the adversities and disputes between Sunnis and Shiites, the surveys carried out among the Iraqi population on the future of Iraq in the last years pointed out that, in a major proportion, the citizens of the two communities considered themselves primarily as being Iraqi citizens. We consider that the presence of foreign troops in any country, forces seen by the indigenous population as forces of occupation, is an obstacle to modernisation, especially as far as the transformations of the political life in that state are concerned. Referring to the disadvantages that a long-term presence of American troops in Iraq could cause this country, former national security adviser at the White House, Zbigniew Brzezinski, wrote in 2008: “A solution to the problem posed by our presence in Iraq, a presence that has been terribly costly to us and very destructive of Iraq, requires recognising that our presence is part of the problem. Iraq cannot be put together if we continue to be there, hoping that somehow our occupation will yield a stable, self-governing, somehow viable Iraq”²⁹. It is known that US combat troops withdrew from Iraq, after seven years, in August 2010 and given that this Arab country now has institutions capable of providing leadership of the Iraqi society, we believe that favourable conditions are provided to pass, in the next period, to a process of modernisation of Iraq, with beneficial effects at regional level. Clearly, an Iraq undergoing a full modernisation process could be in the future, along with Turkey, “a pole” of regional stability, in which there could be created conditions for the entire Middle East to follow a positive trend as far as regional security is concerned.

In our approach, we believe it is important to remember that Robert Cooper, analysing postmodern world states³⁰, comes to the conclusion that violence, in the form of armed conflicts, is virtually nonexistent among them. The same thing is maintained by Joseph S. Nye, Jr., who makes the following statement: “The relations between rich democracies have changed profoundly. Neither France and Germany nor the United States and Japan expect a war and even suggest such a thing. Their complex interdependence forms big islands of democratic peace in the world today”³¹. By comparison with the postmodern world, the countries of the Muslim world belong to the premodern or modern world, where the probability

²⁹ Zbigniew Brzezinski, Brent Scowcroft, *America și lumea*, Editura ANTET, Filipeștii de Târg-Prahova, p. 40.

³⁰ For instance, the European Union states are considered to be postmodern.

³¹ Joseph S. Nye, Jr., *Descifrarea conflictelor internaționale*, Editura ANTET, Filipeștii de Târg-Prahova, 2005, p. 226.

of interstate and intrastate military conflicts is much higher. Besides, the Huntingtonian clash of civilisations thesis is mostly invalidated by the fact that, over the past 15 years, there have been many conflicts within the Islamic world, which clearly demonstrates that war today is far from being just a “*business*” between communities belonging to different cultures. The question that naturally arises is: what would be the path for Islamic world states to follow so that the action of the insecurity-generating factors that are specific to these communities can be much reduced? We believe that the modernisation of these Islamic countries, from the economic, political, social etc. point of view, may be the option that could place these state entities in another perspective, clearly positive, from the standpoint of their contribution to global security. The modernisation of the Islamic world, together with globalisation, would make the Muslim states have more advanced economies, increase economic interdependence between these states and reduce the danger of interstate conflicts, according to the theories developed in security studies.

Although the West is considered the “*inventor of modernisation*” and the first to implement it, it is very well-known that the process of modernisation has included many other countries outside the “*Western area*”: “*The West holds no monopoly on modernisation, a fact proven by different peoples of East and South Asia, the Japanese, the Koreans, the people from India or Malaysia and many other nations outside the Western world modernising themselves, following an ongoing process for almost a thousand years (...). The pace of modernisation has intensified, its purpose has expanded and there are no signs of the process slowing down*”³². It follows that just as these states have modernised over time, the Islamic world states could also follow this trajectory, which would mean gradually getting close to the “*postmodern world*” described by Cooper, in which the benefits of security, at regional, as well as global level would be indisputable. Addressing the security dimension specific to the Islamic world, in the context of global security, one must refer, of course, to the phenomenon of international terrorism promoted by fundamentalist organisations with Islamist orientation. We believe that any serious analysis on global security cannot but take a careful look to all types of threats that are found in Muslim communities, including the terrorism claimed by Islamist organisations, which have a regional and global impact. Global terrorism, promoted by terrorist organisations with branches on all continents, which claims its affiliation to Islam, is one of those threats that endanger global peace, security and stability. It is well-known that, in many Muslim states, there are Islamic organisations considered by the Western world as fundamentalist, which manifest under the “*banner of political Islam*” and declare themselves openly against any Western interference

³² Michael A. Palmer, *op. cit.*, p. 13.

and influence: *“Islamists considered themselves fearless fighters against modernity and the West, but, in fact, they are the ones who have imported and covered in an Islamic vocabulary some of the most questionable ideas that have ever been born in the modern West”*³³. During the Bush Administration, referring to global terrorism produced by Islamist organisations, American neoconservatives believed that *“the structural reason of terrorism comes from the bad governance of Muslim countries in general and of Arab ones in particular”*³⁴. Analysing this neoconservative vision, it follows that the *“guilt”* for committing terrorist attacks, if we can say so, rests solely with Islamic states, without considering the political, economic, military etc. factors, *“exterior”* to the Islamic world, which can cause terrorist attacks. Considering the cause of terrorism as being within Muslim societies, the Bush Administration adopted those measures through which it placed the *“reform of Islamic countries”*³⁵ in the centre of its antiterrorist strategy. Therefore, countering global terrorism in the eyes of the former US Administration was regarded both from the perspective of specific military actions against terrorist networks (like al-Qaeda) and as a support in launching a broad reform process in the Muslim countries for the modernisation of political, social, economic etc. life. However, we believe that modernisation, in its *“forced”* version (as in Iraq, for instance), if we can call it so, can trigger the resistance of the affected communities to the *“modernising action”*, followed by acts of violence, including terrorist actions, arising from the instinct for preservation of traditional values. By agreeing to such reasoning, we believe it seems important that modernisation is not perceived in the Islamic world as a new form of *“colonialism”*, which would reduce the risk of terrorist attacks against the one considered non-colonialist. To conclude, we can admit that the process of modernising Islamic states, *“entwined”* with globalisation, will gradually lead, in the coming decades, on the one hand, towards values specific to a *“universal civilisation”* that begins to prefigure at global level and, on the other hand, it will further strengthen a *“segment”* of traditional Islamic values, the one that remains permanently in each culture. We also believe that, in the future, the social turmoil that can be triggered in response to modernisation as well as to globalisation will continue to cause insecurity in many regions on the planet, as well as in many states of the Islamic world: *“Global cultural homogenisation generates identity reactions, especially nationalism and fundamentalism, these being considered to express needs better than the current secular order, which favours*

³³ Virginia Mircea, *Islamul și soarta lumii. Fundamentalismul islamic ca ideologie politică*, Editura SEMNE, București, 2009, p. 243.

³⁴ Oliver Roy, *op. cit.*, p. 27.

³⁵ *Ibid*, p. 27.

*the modern Western values*³⁶. It is imperative that Islamic countries should not perceive modernisation as a process that reminds them of the excesses of the “colonial era”. This would mean understanding this process as “forced modernisation”, which would further delay the popular “option” for modernisation and would generate violent reactions. This caution is clearly expressed by Pierre-Jean Luizard: “During the colonial actions, modernity, a power source, had an imperialist character. For, ultimately, what else colonisation has been if not brutally putting in contact modern societies with the other ones”³⁷. We can say that beyond the obvious benefits that would result from the modernisation of Islamic societies, we share the opinion of specialists in the field of global security, who reckon that Islamic fundamentalism will continue to manifest violently, considering modernisation as an attack on the Islamic traditionalism. “Accelerating modernity – states Virginia Mircea – pushes the believers of all religions (including Muslims) into a reactive and even violent state”³⁸. In this respect, we reckon that carrying on the processes of modernisation in the Islamic world with a speed closer to the one at which Islamic communities can maintain stability may be one of the future solutions for improving the security level of Islamic states. We believe that security specialists, together with experts in political science, globalisation theory etc. must consider that “threshold” of modernisation, which, once reached, can make Muslim societies become anarchic, with the threat of escalating violence and degenerating into conflict. Understanding these things, combined with the idea that modernisation is not an outside “force” that circumvents the traditionalist dimension of those societies could be a guarantee that Islamic countries will increase their contribution within the international community to providing a clearer world than the one today.

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³⁶ Virginia Mircea, *op. cit.*, p. 115.

³⁷ Pierre-Jean Luizard, *op. cit.*, p. 217.

³⁸ Virginia Mircea, *op. cit.*, p. 106.

INTERNATIONAL TERRORISM

– Conceptual Delimitations and Theoretical Considerations – (II)

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Because terrorism has become a transnational threat, the author believes that the solution should have a global character. This means that international cooperation is required. In reality, states cooperate only partially, and cooperation is limited only to a few concrete aspects and a certain number of states. Beyond the differences in interpreting the phenomenon, the explanation for this situation resides in the American National Strategy for Combating Terrorism, promoted by former President George W. Bush, in the lack of trust that exists at the level of the international system regarding states' honesty, as well as in the perceptions related to breaking national sovereignty. Some states perceive the actions taken by military forces as something that increases the probability of new terrorist attacks, in other words they consider that an endless spiral of violence has to be dealt with.

Keywords: *Communist movements; contemporary terrorism; target acquisition; globalisation*

Terrorist Groups Typology

Audrey Kurth Cronin highlighted different types of terrorist groups and their historical importance as follows: “*there are four types of terrorist organisations currently operating around the world, categorised mainly by their source of motivation: left-wing terrorists, right-wing terrorists, ethno-nationalist or separatist terrorists and religious terrorists*”¹⁵.

Each of these four types of groups has had periods of relative prominence in modern era, left-wing terrorists interfering with the communist movement, right-wing terrorists being inspired by fascism, and the majority of those in the category of ethno-nationalists/separatists being constituted against the background of the decolonisation process, especially in the aftermath of the Second World War. In the past decade, religious terrorism has become the most prominent form of terrorism.

Although currently there are groups belonging to all the four categories, left-wing and right-wing terrorists were more numerous during the 1960s and the 1970s, while the other two categories of terrorist groups dominate

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¹⁵ Audrey Kurth Cronin, *Behind the Curve: Globalization and International Terrorism*, in “*International Security*”, Vol. 27, No. 3, Winter, 2002-2003, pp. 30-58.

the current period. This terrorist groups' taxonomy should not be regarded strictly, as the majority of them have a mix of ideologies that motivate them – some ethno-nationalist groups, for instance, have religious characteristics or agendas –, but, usually, one type of ideology or motivation is predominant¹⁶.

Trends in Contemporary Terrorism

The developments in international terrorism have led to the shaping of the following contemporary trends:

a) contemporary terrorism has become transnational or international.

Current terrorist groups have transnational ties and subscribe to an international agenda. These ties may be ideological or operational. This evolution has been generated by the US policy in Iraq and Afghanistan, which has stimulated the supporters and sympathisers of terrorist groups, more and more often seen as the (only) efficient opponents of the USA in the Muslim world. Baroness Eliza Manningham-Buller, former Head of MI5 (Security Service of the UK), recognised that the War in Iraq substantially contributed to increased domestic terrorism (the so-called *home-grown terrorism*) in the UK, through the radicalisation of a growing number of Muslim young people. The military operations in Afghanistan and Pakistan have added to it, which has increased the local population resentments, leading to subsequent radicalisation. Such actions represent a powerful vehicle for the politicisation of the religious sentiment, stronger among the young Muslims in the Western world;

b) proliferation of small local (national) extremist groups, having no ideology or well-defined goals, in many areas of the world. Lately, many small local terrorist groups have emerged, especially in the Muslim world, which do not have direct operational ties with the command of al-Qaeda network, but declare they affiliated to it in order to stimulate the local context in favour of terrorism. The result is the diminished role al-Qaeda plays in planning and executing terrorist activities and the increased role it plays as far as ideology, propaganda and motivation are concerned. This partnership is advantageous to both al-Qaeda and affiliated groups. Al-Qaeda wins as this way: its global character is recognised; its funding is extended due to these affiliated groups; it attracts people in the local environment, who have direct access to the established targets, are able to better avoid counterterrorist measures and may be more effective in planning, organising and executing attacks. The selection of targets is often made by attackers belonging to these local groups only, al-Qaeda central command choosing only the time

¹⁶ *Ibidem.*

of the attack, for reasons related to the media (propaganda and strategy). In turn, the affiliated groups gain notoriety (al-Qaeda is a successful brand in the world of terrorists, considering the success of its attacks in the past, so terrorists are proud of their belonging to this organisation), as well as in terms of propaganda and organisation. On the other hand, this partnership presupposes risks, too: for al-Qaeda, it means the loss of moderate Muslims political and financial support, and for its affiliated groups, it means the exposure to tougher counterterrorist measures on the part of authorities, as well as possible splits generated by the disagreement of the members regarding these groups ideology and goals;

*c) organisation of more sophisticated and more lethal attacks*¹⁷, terrorists exploiting the advantages provided by globalisation. In the period modern terrorism emerged (the 1960s), terrorist groups strategies sought the calibration of violence in order to have potential sympathisers and a place at the negotiating table, where the status quo could be revised. Gradually, the political issues whose resolution was claimed by terrorists during that period has led to the change in the attitude of today's terrorists. New terrorists deliberately try to maximise the number of victims and to cause more important economic losses. Contemporary terrorism distinguishes due to its high degree of lethality, following the easy access to efficient weapons and the available information regarding the manufacture of more dangerous type of ammunition¹⁸;

d) growing number of suicide terrorist attacks. The number of religious terrorist groups has considerably grown during the past decades. If, when international terrorism emerged, out of the 11 identified terrorist groups none was qualified as religious, in the period 1980-1992 the number of religiously motivated terrorist groups grew six times, and the tendency has amplified after 1992¹⁹. Thus the number of suicide terrorist attacks has significantly grown in the last two decades, yet it is insignificant in relation to the total number of terrorist attacks. The special attention paid to this type of terrorism is closely connected to the number of victims it has caused. Although they represent less than 5% of the terrorist incidents, they total about 50% of the victims of terrorism (*figure 1*)²⁰.

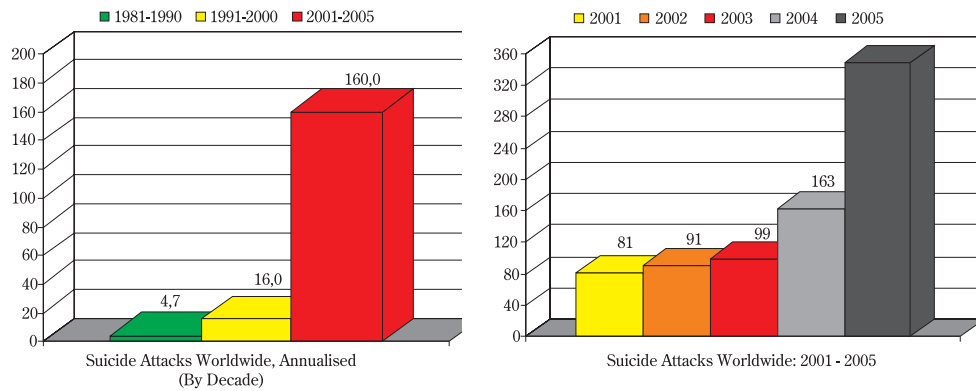
Terrorism in Iraq largely contributes to the spread of suicide terrorism and the vertiginous increase in the number of terrorism victims. The report on 2006 regarding terrorism, issued by the US Department of State, shows that the number

¹⁷ Bruce Hoffman, *Terrorism Trends and Prospects*, at http://www.rc.rand.org/pubs/monograph_reports/MR989/MR989.chap2.pdf.

¹⁸ T. V. Paul, *The National Security, State and Global Terrorism*, in *Globalization, Security and the Nation-state*, International conference, Ankara, Turkey, 2002.

¹⁹ Bruce Hoffman, *Terrorism Trends and Prospects*, *op. cit.*

²⁰ Scott Atran, *New Trends in Suicide Terrorism*, on the cited site.



Source: Scott Atran, *New Trends in Suicide Terrorism*, available at http://www.powershow.com/view/54caa-MGY40/New_Trends_in_Suicide_Terrorism

Figure 1

of people wounded or killed in terrorist incidents grew from 4 271 in 2003 to 9 300 in 2004 and more than 40 000 in 2005.

Although some authors sustain that almost all suicide attacks have religious ideological motivations, we note that some secular nationalist groups such as Tamil Tigers and the Kurdistan Workers' Party have launched suicide attacks.

The emergence and proliferation of this type of terrorism were also favoured by the collapse of communism and other political ideologies that had a large number of adepts.

The revival of radical religious movements wherever in the world has had a significant impact on contemporary terrorism. Some researchers in the field consider that today the religious imperative is the most important characteristic of the current terrorist activity. They take into consideration especially the Islamic terrorist organisations and speak about Islamic terrorism, as long as there are numerous terrorist organisations and some of them are extremely violent (Tamil Tigers, to provide only an example), which are not Islamic. The arguments for this position refer to the fact that Islamic terrorist organisations do not proselytise.

Most of the researchers into the phenomenon argue that the main cause of terrorism has to be sought in the frustration accumulated by terrorists. Here is the declaration of a terrorist related to this subject: *"We really learn to hate the moment we become aware of our helplessness. It is a tragic moment; there is nothing more terrible than humility. And, with your dying breath, you have only one thought: how to die in dignity, after having lived a life of misery, naked and blind ?"*²¹;

²¹ Yasmina Khadra, *Atentatul*, Editura Trei, București, 2007.

e) diversification of terrorist targets. In the past, terrorists used to choose airliners, embassies and navy ships (such as USS Cole or Limburg). Terrorists in the current generation have identified new targets, represented by public events with numerous participants and national infrastructure. After 2005, seven terrorist attack attempts against public transportation have been recorded, three of them being successful and killing almost 240 people²²; there have been six attacks on 12 different hotels in five countries, resulting in about 330 dead; five credible attempts or threats have occurred during major sports events in five different countries (eight people died during these actions), and two such events were cancelled following threats (one of them was Paris-Dakar Rally);

f) overlap between terrorism and organised crime. There are some convergent elements related to terrorism and organised crime:

- terrorist organisations conduct some activities that are specific to crime groups to fund terrorist activities. Moreover, terrorist organisations have been inspired by the techniques proper to the criminal ones. Thus the terrorists or the Taliban in Pakistan, Iraq or Afghanistan get large sums of money out of kidnapping²³, extortion and drug trafficking – activities that are specific to organised crime. Today, frauds of any type together with drug and people trafficking²⁴ represent an industry in which the extremists in Western Europe get more and more involved;
- organised crime groups use tactics specific to terrorist organisations (violence) to shape the operating environment;
- interests of the moment may lead to the establishment of alliances between the two categories of organisations;
- existence of hybrid groups (e.g. the Revolutionary Armed Forces of Colombia).

However, there are essential differences between the two types of threats, which make the long-term cooperation between the two types of organisations less probable:

- organised crime has an economic motivation, therefore it focuses its activities on material gains; crime groups seek to weaken but not destroy state institutions;

²² CNN, *At least 174 Killed in Indian Train's Blast*, 11 July 2006.

²³ Only during 2008 the Taliban in Pakistan kidnapped 70 people; the Iraqi insurgency kidnapped a large number of people, including three Romanian journalists.

²⁴ For example, the Revolutionary Armed Forces of Colombia, a terrorist group, get millions of dollars out of drug trade and illegal operations related to taxation; the main funding source of the Taliban in Afghanistan is the opium trafficking (80% of the quantity of opium in the world comes from Afghanistan).

- on the other hand, terrorism is politically motivated; terrorist organisations seek to destroy the state or to change the political system fundamentally;
- crime groups want to remain in the shade (often they establish the bases from where they distribute the goods they trade on the outskirts of communities), while terrorist ones seek to be as visible as possible.

Combating Terrorism

As terrorism has become a transnational threat, the solution should have a global character. It means that international cooperation is necessary. In reality, states cooperate only partially, and cooperation is limited to some concrete aspects and a certain number of states (democratic). Beyond the differences regarding the phenomenon interpretation – as a result of divergent political interests –, the explanation for this situation resides in the American strategy to combat terrorism, promoted by former President George W. Bush, in the lack of trust at international level regarding the honesty of states, as well as in the perceptions related to infringement on national sovereignty.

Some states perceive the actions of armed forces as increasing the probability of new terrorist attacks, in other words they consider that an endless spiral of violence will be entered into. From their point of view, terrorism may be best managed through law enforcement methods. These states also argue that military force should be resorted to only under extreme circumstances and even then its use may have negative consequences.

Not all states agree on the concept of *war against terrorism*, launched by President George W. Bush in October 2001. Some states perceive this war as a means to promote the American geopolitical interests wherever in the world.

Drone attacks executed by the US Armed Forces in Afghanistan on the Pakistani territory are seen as a breach of sovereignty by the majority of this country population. The situation has negative effects on the counterterrorism campaign launched by the Pakistani Armed Forces in the federally administrated tribal areas (at the border with Afghanistan), being appreciated that the military and political leaders in Islamabad yielded to Washington pressures.

In this context, the response to terrorism is more individual and less collective. Some European states participation in the wars in Afghanistan and Iraq should be seen as a foreign policy decision – motivated by the desire of these states to get closer to the USA, with a view to obtaining better security guarantees or economic advantages in the future – and not necessarily as a method to combat terrorism.

The states affected by international terrorism have taken a series of measures: adoption of anti-terrorism laws, security restrictions in airports and other crowded

public places, increase in the security structures and establishment of military or paramilitary counterterrorist structures.

The current response of states to international terrorism varies depending on the perception of threat. Not only is the intensity (scope) of these measures different but also the nature of the particular measures. The USA has a powerful military component, materialised through the burst of the conflicts in Afghanistan and Iraq and the deployment of troops in different areas in the world; the European Union, by contrast, insists on using soft power (dialogue, negotiations/mediation, elimination of causes). Also, certain states have a reactive attitude, while others approach the phenomenon proactively.

An important element in combating international terrorism is represented by countering the current tendency to extremism and radicalisation of a growing number of individuals at international level (mention should be made that we do not refer here only to the Muslim community in Western Europe and the Middle East). An important particular aspect of this effort should be to counter the messages that inspire and incite terrorists to atrocious acts of violence. Propaganda in favour of international terrorism, intensified especially after the USA launched the global war on terror (materialised, among others, in the wars in Afghanistan and Iraq), has had extremely negative consequences on the evolution of the phenomenon, and the current trend shows that this propaganda is increasing and becomes more and more sophisticated.

The measures taken to enforce law and the military actions (be they the result of a “*coalition of the willing*”, formed by many states) may affect only temporarily the activity of terrorist organisations. Such measures and actions may liquidate some of the terrorists or may convince others to renounce terrorism, but they are inefficient when it comes to combating the extremist interpretations of the religious texts or the political theory, as a result of education. The elimination of terrorist leaders has an insignificant effect on terrorist activities. In a study aimed at the effects of decapitation of terrorist groups between 1945 and 2004, Jenna Jordan came to the conclusion that the measure led to the liquidation of only 17% of the 298 analysed situations among mature religious organisations (having more than 10 years of activity)²⁵. In the case of Hamas, Daniel Byman argues that it has intensified terrorist actions campaign against Israel. Jordan provides two explanations for the resistance of mature extremist terrorist groups: first – older and bigger organisations have a bureaucracy that allows them to replace their leaders relatively fast if they do not disappear. The second explanation is related to the fact that religious

²⁵ David Strachan-Morris, *The Irreducible Minimum, Al-Qaida in Iraq and the Effectiveness of the Leadership Decapitation*, in *RUSI Journal*, vol. 155, no. 4, August/September 2010.

organisations are more decentralised and that is why the removal of their leaders has a minor effect on these organisations current activities. Therefore, the liquidation of terrorist leaders, without being accompanied by other counterterrorist measures, will not lead to the elimination of these organisations.

A more efficient response to terrorism is conditioned by reaching a consensus regarding the following aspects: what terrorist acts are; assessment of the effectiveness of the measures taken to combat terrorism (a troublesome aspect, given the fact that current data refer to the activity of terrorist groups rather than to the adopted counterterrorist efforts); motivations of those that join terrorist groups; structures have to manage the efforts meant to collect data about terrorism.

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Contemporary terrorism poses a series of diverse problems to states. These problems have different causes and nature, from the lack of consensus on what terrorism acts are to the lack of convincing data regarding the ways to recruit and motivate potential terrorists, to the effectiveness of the measures to counter extremist-terrorist propaganda and ideologies, to the technical aspects of the cooperation against terrorism or to the most effective strategies to combat the phenomenon. Last but not least, the efforts to combat terrorism are also hampered by the continuous and rapid evolution of the phenomenon at international level, related to the tactics used by terrorist groups, the way they operate, the selection of targets etc.

The current strategy to combat terrorism, focused on the military action and the limitation of internal political liberties, is insufficient and leads to temporary success, aspect demonstrated by the wars in Afghanistan and Iraq. The consequences of such actions are unpredictable, as states fight against an invisible enemy that adopts asymmetrical strategies and has operational bases wherever in the world. Therefore, this strategy should be complemented by efforts aimed at combating extremist propaganda, by the honest dialogue inside Western societies, meant to better integrate Muslim communities in these societies, as well as by measures aimed at reducing economic and social inequalities between rich and poor states and by fairness in current international relations.

In recent years, Muslim communities in Europe have been more marginalised, and this is either a response to being treated with hostility by the native population on the continent or a consequence of the differences in culture, language or behaviour or of the difficulty or inability of these communities to adapt to the life in societies that are more competitive than the original ones, most part of these communities being insufficiently equipped psychologically, socially and technologically. Last but not least, the increasing geopolitical competition at international level

has made Muslim societies more and more identify as victims not only in the political-military or religious plane but also in the socio-cultural one, aspect that is evident inside the Muslim immigrant communities in the Western world, where the gap between these communities and the indigenous population is widening and the Muslim frustration is increasing. Under these circumstances, in the future, a growing threat comes from within Western societies.

In the near future, it will be more difficult to draw a clear line between internal terrorism and the transnational or international one, as a growing number of terrorist groups act transnationally being able to move rapidly from one region to another.

The future of terrorism will also depend on the way states will define terrorism. The anticipation of terrorism evolution has to start with the understanding of the tendencies that manifest in many domains in contemporary society. We cannot accurately predict the success or failure of terrorists' future actions. However, we can assess the factors that contribute to the success or failure of their actions. Moreover, any approach to terrorism has to start with the profound understanding of the causes that generate it.

For Romania, a country that faces a low risk in terms of terrorist attacks, the responsibility of the political decision-makers is to ensure the population that such events may be effectively managed.

English version by
 *Diana Cristiana LUPU*



ROMANIA AND WESTERN BALKANS THROUGH THE PERSPECTIVE OF ECONOMIC SECURITY AND COOPERATION (I)

Cristina GĂLUȘCĂ

In the author's opinion, financial and economic crises have had a serious impact on the Western Balkan countries. Monetary and fiscal policies of the Western Balkan countries have a regressive impact on distribution and poverty.

Economically, Romania expects stabilisation and growth in the near future. Although GDP declined in the last quarter of 2010, indicators are expected to resume growth in 2011.

For Romania, supporting the European and Euro-Atlantic course of the Western Balkan states is one of the key priorities of foreign policy. Romania's status of EU and NATO member country and its proximity to the West Balkan area require special relations with the states in this region.

Keywords: *market economy; exchange of goods; cooperation; trade; perspectives*

Before the “great recession”, the Balkan countries had decent levels of economic growth. As the crisis spread throughout Europe, their development lowered its pace and many countries experienced a tough decrease, requiring the intervention of the International Monetary Fund.

The Balkans are particularly vulnerable in this respect, through the lack of automatic stabilisation of their social protection systems and the impossibility of an easier access to funding and mechanisms in support of the Euro zone. In a wider European context, the crisis had at least three negative effects on the Balkans:

- first, being preoccupied with the economic issues, the EU placed the enlargement second on its agenda;
- second, fighting the crisis involves a big part of the resources of Balkan governments as well as the attention that needs to be paid to the reforms required by accession;
- third, because the EU necessitates the creation of a new regime of economic

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governance, a bigger stress will undoubtedly be placed on the economic and financial policies of candidate countries. The EU will probably try to avoid directly or indirectly the accession of the countries that are generally seen as underdeveloped economically and that may potentially be incapable of obeying the strictest norms.

The global financial and economic crisis has a serious impact on the Western Balkan countries. Unemployment is growing rapidly in two of the most affected countries – Serbia and Croatia – and, in a smaller proportion, yet at a high level, in Bosnia and Herzegovina. There are four groups of macroeconomic responses to the crisis: *monetary policies*, *fiscal policies*, *anti-crisis and market packages* and *social policy measures*. Monetary and fiscal policies in the Western Balkan countries have a regressive impact on distribution and poverty.

Romania ranks first in the European Union in terms of consumer prices increase since January 2011, namely 7%, in comparison with the first month of last year, given the circumstances in which, at the community level, inflation was 2,7 %, according to *Eurostat*. In the last month of 2010, the consumer prices in Romania rose with 7,9% per year, also the highest level in the EU. In the Union, the indicator was at 2,7%.

In the chart with the highest inflation rates in January 2011, Romania is followed by Estonia (5,1%) and Greece (4,9%). The lowest annual rates are in Ireland (0,2%) and Sweden (1,4%). In Hungary, consumer prices advanced at an annual pace of 4%, and in Bulgaria they rose by 4,3%.

In Germany, France and the UK, inflation was of 2%, 1,9%, 4% respectively. As compared to December 2010, annual inflation grew in 15 community states, diminishing in the other ones.

The National Statistics Institute announced, in February 2011, that the annual inflation dropped from 7,96%, in December 2010, to 6,99%, in January 2011, after a rise of 0,77% in the annual rate, mainly because of increasing prices of vegetables, fruits, oil, thermal energy, books, magazines and newspapers.

For Romania, scenarios foresee stabilisation and a certain growth. Even if the GDP decreased in the last trimester of 2010, the indicators are expected to gradually resume their rise.

This year, the economic rise is expected to be of 1-1½%, after it was -2% in 2010. The projection for inflation is a little over 8% at the end of this year, as a consequence of the VAT increase. Improving the rate of absorption of EU structural funds is critical to providing the investments that are needed for strict budgetary constraints. The banking system has been affected by the crisis, however, it still has available capital and liquidities. Nonperforming loans (NPL) are susceptible

of continuing their rise up to the middle this year, as a result of poor economic activity. Capital reserves remain big. The external balance of payments remains partly unchanged. The current account deficit stays at approximately 5,5% of the GDP, being estimate to rise up to 6% by 2012.

	2007	2008	2009	2010	2011	2012
Real GDP Growth Rate	6,3	7,3	-7,1	-1,9	1,5	4,4
Average CPI Inflation (Consumer Price Index)	4,8	7,8	5,6	6,1	6,1	3,4
IPC Inflation, EOP	6,6	6,3	4,8	8,2	3,7	3,0
Current Account Balance (%PIB)	-13,4	-11,6	-4,2	-5,5	-5,6	-5,9
at private level	-10,3	-6,8	3,0	1,3	-1,2	-2,5
Trade Balance	-14,3	13,7	-5,9	-5,4	-6,0	-5,8
Gross International Reserves	-28,7	28,3	30,9	33,9	38,7	41,4

Source: *IMF – Country Report*, January 2011

Table 1: The macroeconomic perspective in Romania

If the current policies are further applied, the fiscal deficit in Romania is about to decrease up to almost 3% in 2012. In structural terms, the deficit will decrease under 2% of the GDP this year, representing a correction of almost 7% of the GDP in three years. The structural deficit will be lowered, from an unsustainable level of 9% of the GDP before the crisis, which will enable the authorities to reach the level required by the Maastricht criteria by 2012. Applying the current policies and maintaining the spending constraints, a global deficit of 3% would translate into a structural deficit of approximately 1,5% of the GDP, and the effects of structural reforms would benefit the pensions, health care and social security expenditure, and profit. The public debt will reach a level of 37% of the GDP this year, then it will decrease, in the medium term, to approximately one third of the GDP. However, the authorities will confront with increased turmoil. The decisions of the Constitutional Court are the ones that can limit the available political tools.

Romania's capacity of reimbursement to the International Monetary Fund is expected to remain credible. A peak was reached in 2010, at 36% of the gross reserves. 2013 and 2014 are peak reimbursement years, with 11,7% and 12% respectively of the gross reserves. While this exposure remains big, the associated risks are alleviated by the relatively low level of the public debt (under 37% of the GDP), where the debt comes to approximately 16% of the GDP in 2011. The total external debt is projected to increase to approximately 82% of the GDP at the end of 2011, from 51% at the end of 2008, but a comeback to economic growth would gradually reduce it to a level that can be manageable in the medium term. The IMF staff have carried on the close cooperation with the ones of the European Commission (EC) and the World Bank (WB). The three institutions also confer with each other as far as Romania's developments are concerned, the IMF, EC, as well as the WB directly participating in common missions.

For Romania, supporting the European and Euro-Atlantic path of the Western Balkan states is one of the major priorities of its foreign policy. Romania's status of EU and NATO member state, as well as its neighbourhood with the Western Balkan area requires a special relation of Bucharest with the states in this region. Analysing Romania's connection with these countries, a series of conclusions may be drawn, such as:

❖ **Romania – Albania**

In the relations between the two countries, a special place is held by the actions taken in the field of defence and safety. Within NATO, the armed forces participate in many common operations, meant for both training and peacekeeping in crisis regions. Moreover, as far as fighting against terrorism, clandestine trafficking and corruption is concerned, the two governments, by means of specialised bodies, are part of the same coalition, with coordinated programmes and actions. The total volume of trade between the two countries is at a low level. In 2010, the total volume of trade between Romania and Albania was of 38,68 million \$, out of which 37,88 million \$ represented imports and 0,80 millions \$ were the exports, the trade surplus being of 37,08 million dollars for Romania.

The main products of Albanese exports are ores, detergents, metals, coal, cement, plaster etc. From Romania, there are made imports of metallic, textile products, furniture, glass etc. Abolishing customs barriers and establishing a proper infrastructure in the field of energy and telecommunications will make the region more attractive for its products, as well as for its tourist offers. It is estimated that not requiring visas for Albanese citizens will increase the number of Albanese visitors, businesspersons and tourists in Romania. Freedom of movement may boost the economic relations between the two countries.

	2005	2006	2007	2008	2009	2010
TOTAL	17,1	32,3	54,3	58,4	47,6	73,30
Exports	15,4	30,8	50,5	56,0	42,8	71,95
Imports	1,7	1,5	3,8	2,3	4,8	1,35
Trade surplus	13,7	29,3	46,7	53,7	38,0	70,61

Source: <http://www.dce.gov.ro/>

Table 2: Evolution of merchandise trade between Romania and Albania (mil. USD)

In 2009, the trade with Albania was of 47,6 million dollars, with a decrease of 18,5% as compared to the same period in 2008, which was mostly owed to the economic crisis, as well as to the nonparticipation of Romanian companies in auctions for electric power supply. The exports were of 42,8 million dollars and they too decreased with 23,6% as compared to the same period of 2008.

The main share of our exports was represented by: chemical industry products 42% (an increase of 63,7%) and mineral products 20,8% (a group that underwent the most serious decrease, 52,9% as compared to the same period in 2008), food products, beverages, tobacco 10,7% (this group increased with 186,1% as compared to the same period of 2008, mainly due to increasing exports of tobacco, food products and beverages). The imports, 4,8 million dollars, are at a record level reached by Albania in the last 10 years, the increase being of 104,7% as compared to the same period in 2008. Their main share was represented by: electric machines and devices 64,2% (the increase being of 26,6%); various goods and products 16% (the subgroup “*furniture*” decreased with 68,1% as compared to 2008).

❖ Romania – Bosnia Herzegovina

The relations with Bosnia Herzegovina follow an ascending path, being circumscribed to Romania’s priority foreign policy strategy in relation to the entire Western Balkan area.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
TOTAL	21,1	15,2	17,9	59,5	173,3	254,1	120,4	171,8	95,6	95,86
Export	12,3	14,6	17,2	40,1	127,7	179,0	72,4	106,4	72,6	75,58
Import	8,8	0,6	0,7	19,4	45,6	75,1	48,4	65,4	23,0	20,28
Trade surplus	5,5	14,0	16,5	20,7	82,1	103,9	23,6	41,0	49,6	55,30

Source: <http://www.dce.gov.ro/>

Table 3: Evolution of merchandise trade (mil. USD)

In 2010, the volume of bilateral trade rose by 28,3%: 29,26% the exports, and 25% the imports, as compared to the same period in 2009. Romania is in the same group of exporters (40-60 million Euro) with the UK, Switzerland, Greece, Sweden, Slovakia. Exports mainly consist of: chemical industry products, machinery, common metals, plastic materials, rubber, live animals, transport vehicles and equipment. Imports mainly comprise: mineral products, common metals, electric devices. At the level of direct investments, on 31 December 2009 there were 37 Romanian-Bosnian joint ventures, with a total invested capital of 106,9 thousand US dollars. On 18 December 2008, within the Bosnia and Herzegovina Export Promotion Agency, the Romanian-Bosnian-Herzegovinian Business Club was opened in Sarajevo.

❖ Romania – Croatia

The Romanian-Croatian economic relations are regulated by the provisions of the Stability and Association Agreement (SAA) signed with the Republic of Croatia on 29 October 2001 and enforced on 1 January 2005. Beside this document, the legal framework that regulates the bilateral economic relations consists in a series of agreements and treaties in domains such as road, maritime and air travel,

tourism, investments, taxes, agriculture. From the standpoint of commercial effects, Romania's accession to the EU has led to an increase in the bilateral economic trade, the SAA provisions facilitating the increased agricultural product imports from Croatia to Romania at a higher rate as compared to the Romanian agricultural product exports to the Croatian market, considering the principle of asymmetry used during the negotiations between the European Commission and the government in Zagreb.

	2005	2006	2007	2008	2009	2010
TOTAL	310,2	221,0	226,3	194,21	174,18	191,28
Export	233,2	147,7	144,5	129,2	106,34	128,71
Import	77,0	73,3	81,8	88,54	67,84	62,57
Trade surplus	211,0	74,4	62,7	40,66	38,5	49,42

Source: <http://www.dce.gov.ro/>

Table 4: Economic Cooperation in the development domain (mil. USD)

The effects of the global economic crisis were also felt at the level of the volume of bilateral trade, which decreased in 2009 by approximately 20% as compared to 2008. On 31 December 2009, the total volume of trade between Romania and Croatia was of 199,78 million dollars, out of which 114,88 million dollars represented the exports, and 84,90 million dollars the imports, the trade surplus being of 29,98 mil. for Romania. In 2010, the volume of bilateral trade increased by 14,5%, the exports increasing by 24% and the imports decreasing by 1,2%, as compared to the same period in 2009.

On 31 December 2009, there were 63 Romanian-Croatian joint ventures in Romania, with a total invested capital of 5,34 million USD, Croatia ranking 64 among foreign investor. The bilateral trade balance was always favourable to Romania. The structure of the Romanian exports mainly consisted in: live animals and animal products (38,05%); electric machines, devices and equipment (21,80%); common metals and metallic products (9,68%); mineral products (9,09%); plastic products, rubber and related articles (7,60%); vehicles, aircraft, transport equipment (7,51%); vegetable products (5,85%); prepared foodstuffs, beverages, tobacco (4,58%).

Between 2000 and 2005, the volume of trade increased constantly, from 22,9 million dollars in 2000 to a maximum of 310,2 million dollars in 2005. Consequently, the value of trade had a sinusoidal development.

The economic recovery at European level will contribute to the development and diversification of the range of products that are subject to the Romanian-Croatian bilateral trade and will lead to the intensification of contacts between economic operators in the two countries with the purpose of identifying new possibilities of economic cooperation. In the justice domain, the bilateral cooperation takes

place based on biennial action plans agreed upon by ministers and assessed periodically at the level of senior officials from ministries.

The main objectives of the bilateral cooperation are focused on police cooperation and border control, international judiciary cooperation, fight against terrorism and organised crime and illegal drugs trafficking. It is expected that negotiations will be started with a view to signing new legal instruments: protocol of cooperation in the labour domain and agreements regarding the exchange of workers, social security and a cooperation agreement between the ministries of justice.

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In the second part of the article, the author will present economic aspects of the relations between our country and FYROM, Montenegro and Serbia.

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EXPEDITIONARY OPERATIONS IN THE CONTEXT OF NATO TRANSFORMATION – CJTF AND NRF –

Colonel Vasile MAIER

CJTF is designed in order to ensure the flexibility of NATO military forces. Moreover, CJTF has tried to make the concept of group of forces permanent as well as to make it the modus operandi of the Alliance and a standby capability for peacekeeping missions, peace enforcement and contingency operations, favouring NATO's circumstances for a rapid reaction, with an initial deployment period within 30 days.

NRF is a reflection of the Alliance's way of adapting to the incertitude of the future security environment and it illustrates the way of using expeditionary operations in this new security environment.

The author reckons that, in its essence, the NRF initiative is designed as a means to provide the Alliance with a robust and agile military tool, which is able, at the same time, to induce an expeditionary attitude among the European allies.

Keywords: *military interoperability; expeditionary capabilities; IRF; new strategic concept*

Throughout the '90s, the Alliance struggled with its incapacity to project its power beyond the European continent, influenced by the stress placed by Alliance members on defending its borders during the *Cold War*¹. At the middle of the '90s, NATO had to extend towards Eastern Europe by engaging its forces to stop the ethnic conflicts in the Balkans. NATO's experience in the Balkans, followed by its missions in Afghanistan, has been characterised by a broad range of missions, illustrating the need for adapting its forces to the specifics of expeditionary operations. *COMBINED JOINT TASK FORCE (CTJF)* and *NATO RESPONSE FORCE (NRF)* exemplify this transformation of NATO defence in order to meet the requirements of untraditional *force – against – force* missions, which are beyond the typically European centre of gravity.

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¹ Richard Krugler, *The NATO Response Force 2002-2006. Innovation by the Atlantic Alliance*, in *Case Studies in Defense Transformation*, Washington, DC, National Defense University, 2007, available at <https://transnet.act.nato.int/WISE/Expedition/SAICsSTUDY0>, retrieved on 19.03.2010.

CJTF and Expeditionary Operations

During the informal meeting of defence ministers in October 1993 in Travemünde, the Federal Republic of Germany, the USA formally suggested the concept of *Combined Joint Task Force – CJTF*, in an effort to push the Alliance forward on the road towards the operations outside the area of responsibility and towards the expeditionary doctrine and structures. Moreover, the CJTF concept drew attention to the potential of attracting into the Alliance partners that could thus significantly participate in and contribute to certain operations with their forces: “*The concept of Combined Joint Task Forces (CJTF) provides flexible and efficient means to enable the Alliance to generate forces at short notice, providing rapidly deployable, multi-national, multi-service task forces with appropriate command and control arrangements*”². This concept enables CJTF to conduct a full spectrum of operations in the 21st century, deployable either within NATO or outside its borders.

A CJTF was defined as a *group of combined and joint forces*. CJTF was conceived as a deployable, combined (multinational) and joint force, tailored for the missions and ready for the entire range of Alliance missions, being structured on three levels: CJTF headquarters, headquarters of subordinate components, and forces meant for operations. Within the CJTF, it was given the possibility for elements from various partner nations that were not part of NATO forces to be included. The CJTF headquarters was designed as a deployable task force, with a variable, temporary size, combined, and joint, tailored to carry out missions, which supported the CJTF commander in exerting command and control over the entire CJTF and able to be localised both on land and at sea.

The imperative of CJTF was oriented towards carrying out missions in crisis situations, at the same time having the capability to face all Alliance missions and roles. Its traditional mission was that of *collective defence*. Its missions were designed to take place outside NATO area of responsibility and included peacekeeping, humanitarian as well as crisis response missions.

The role of CJTF, consolidated with time, was to make NATO forces ready to respond to crises beyond the spectrum of a peace operation and to extend security and stability outside Alliance borders. The forces that were once used to defend NATO own forces were thus being used by the Alliance in the crises occurred outside its borders. The CJTF concept provided NATO forces and personnel

² Kelly J. Thomas, *Security in the 21st Century: NATO's Combined Joint Task Force (CJTF) Concept*, US Army War College, 2001, p. 4, available at <https://transnet.act.nato.int/WISE/Expedition/SAICsSTUDY0>, retrieved on 20.03.2010.

with the possibility to prepare and train in exercises that took place on a regular basis in the joint multinational environment (*Allied Effort Exercise* – 1997, *Exercise Strong Resolve* – 1998, *Exercise Strong Resolve* – 2002, *Exercise Allied Action* – 2004).

Moreover, CJTF was designed to provide NATO military forces with mobility and flexibility. CJTF tried to make the concept of group of forces permanent in order to transform it in a *modus operandi* for the Alliance. CJTF was intended to provide NATO with a standby capability for peacekeeping missions, peace enforcement and contingency operations, favouring NATO's circumstances for a rapid reaction, with an initial deployment period within 30 days.

Because the capabilities were gained without adding new structures to NATO, CJTF was initially considered as a response that did not need additional funding and could be established rapidly, engaged for various emergencies and then demobilised. Mainly, CJTF was to be initially composed of NATO forces, to which partner non-NATO member states forces would be added and then integrated. In order to carry out responsibilities and, at the same time, to control costs, it was agreed that the personnel should be selected from the already existing organisations. The CJTF command, staff and liaison personnel were tailored to meet the missions, the size of participating forces and to depend on the nations that provided the participation of forces in CJTF. Depending on the assigned mission, a CJTF was placed under the command and control of either a NATO or EU integrated military structure. Moreover, depending on the mission of the CJTF command, the location could be on the ground or on a naval platform with the purpose of providing greater operational flexibility.

The functional requirements of a CJTF command included: assimilating and disseminating information; receiving and engaging forces; maintaining communications between subordinated elements and the other agencies; logistic support; airspace management.

CJTF could be seen as a process and as a structure at the same time. Regarded as a process, CJTF would provide the necessary equipment to the Alliance, determine the forces and capabilities harmonisation in order to act jointly. CJTF would integrate political, economic and military capabilities, at the same time remaining sensible to the cultural factors. With regard to structure, it had to provide NATO's command and control architecture for directing and engaging the coalition in multinational combined operations. International coalitions had to be capable of providing the integration of volunteer capabilities in the command and control structure that was unified, flexible and adaptable.

Nevertheless, CJTF remained far from being an operational reality. We believe that CJTF is a history of intense planning and slow action. Each year, NATO has taken small steps for implementing CJTF. One can thus characterise the concept

as experiencing a permanent evolution but undergoing a rather compact political opposition, in order to slowly receive, following long discussions and postponements, the approval of NATO member nations. The main unsettled problems consisted in the engagement of the group of forces, C2 connections between headquarters, airspace control and use of new technologies. To conclude, CJTF was a long and controversial project that materialised itself in interminable discussions for change, multiple requests of action and plans, which were all developed with much smaller steps.

NATO Response Force

NATO Response Force (NRF) is a reflection of the Alliance adapting to the incertitude of the future security environment and an illustration of the way of using expeditionary operations in this security environment.

In essence, the NRF initiative was designed as a means to provide the Alliance with a robust and agile military means, which was able, at the same time, to induce an expeditionary attitude among European allies. The two principles on which its construction relies on lay at the basis of a multinational force and generated the military transformation very close to the American one. At the political level, the major reason that stood behind NRF was to strengthen transatlantic connection in time of crisis.

The NRF initiative was a brilliant idea, put forward at the right time and welcomed by the heads of state and government during the 2002 Prague Summit.

With 25 000 mostly European troops, the NRF was designed to provide the Alliance with a high level of readiness, a tool with efficient technology, meant to engage in high intensity operations next to the American armed forces. Moreover, the force was created so that it could be deployable within 5 to 30 days, and capable of self-sustaining for a month or more, provided it had logistic support. Thus, at the first materialisation of the NRF, the force comprised an enhanced combat brigade, a combined naval component and an air element capable of performing approximately 200 sorties per day. In addition, beside these main elements, the force was expected to include a number of niche capabilities.

By rotating both the national troops engaged and the NATO means assigned to the force every six months, the NRF was planned in order to stimulate transformation. As stated in the NRF concept, *“the rotation of units through the NRF readiness windows will assist in disseminating enhanced capabilities and experiences in joint operations into a broad segment of Alliance forces”*³. After the initial

³ Allied Command Transformation, 2009, p. 7.

six months of the national training programme, the units meant for NRF will carry out another six months of NATO exercise programmes and a final test before being certified as NRF forces. It is only after this programme that the multinational forces are put on standby as the NRF force number X (in the second half of 2011, NRF 17 is on standby). While the force is kept on its standby period for another six months, the entire NRF cycle requires about 75 000 troops or three NRF at any given time: one in preparation, one mission and one on standby⁴.

NRF declared its final operating capability at the Riga summit in November 2006, despite considerable difficulties. After only eight months, the Alliance's military authorities revoked the declaration after it became clear that member states could not engage the necessary forces. Starting with that day, the force was regarded as a failure: while most allies benefited from the participation in the NRF, the lack of a concrete engagement of troops and the disagreements on the operational role of forces largely eroded its credibility. But these could be changed with the revised adoption of the new NRF construction.

In January 2009, the leading agent of modernisation, Allied Command Transformation (ACT), evaluated the transformational value of the NRF in detail. Recognising that much of the potential was still unused for potential improvements, it was concluded though that significant progress was made in politics and funding, development of capabilities and military interoperability during the establishment of the rapid response force⁵. In particular, many small states and the new members of the Alliance, which had minimal expeditionary capabilities and minimum experience before joining the Alliance, reported on the benefits of the force. Among the countries that can be included in this category there are: Denmark, the Netherlands, Poland, Romania and the Baltic States.

Imagined as the first Alliance response force to an emerging crisis, NRF soon proved to be a force that permanently needed additional and capabilities troops. The political aspirations did not match the concrete engagements of forces.

NATO Defence Ministers met again to discuss about the NRF in February 2009 and, in the coming months, the Allied Command Operations developed three possible solutions to the difficult situation the NRF was in. *Option Alfa* included only the elements of command and control and, therefore, for all practical solutions, abolished the entire concept. *Option Bravo* included a future option for gradual approach, which was *Option Alfa* plus a limited number of additional troops; *Option Charlie* included a fundamental force restructuring. In May 2009, the Military Committee

⁴ R. Krugler, *op. cit.*, p. 7.

⁵ Allied Command Transformation, p. 8.

endorsed *Option Charlie*, and in June 2009, Defence Ministers agreed to this option. Implementation began immediately and was planned to be carried out at the middle of 2011, when NRF 15 was on standby. *Operation Charlie* means the restructuring of the force – which was designed with an explicit intent to provide maximum opportunities for the participating nations. Allies agreed to a dual structure, consisting of 14 000 troops in the Immediate Reaction Force – IRF, similar to – but much more flexible than – the core existing in the gradual approach and the Response Force Pool – RFP. The latter is permanently open and its size will depend on the number of forces that nations are willing to engage. Nations can significantly contribute forces to the RFP under flexible terms and conditions, meaning that the current operational engagement in future missions of the RFP can be made on an ad hoc basis. IRF will consist of operational and tactical levels of pre-designated command and control, as well as land, air, naval or joint response forces. The size of the force has been determined only for tactical operations, but in most cases, the IRF will be supplemented with national capabilities engagements made to the RFP. The forces engaged to the IRF will be ready to be deployed within 2-30 days, while RFP elements can be deployed within 5-60 days. To reduce the pressure of the entire group of deployable forces, a waiting period of 12 months was adopted⁶.

Although NRF has been regarded as a failure until now, the initiative has brought an invaluable value on NATO's agenda. In this respect, although the main reasons for the NRF's lack of success will not disappear in the near future, we believe that the last revision of the concept can be just the solution that makes the force be a real success.

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When the CJTF and NRF initiatives were launched, they were aimed at trying to provide NATO with vehicles for modernisation and with agile capabilities of waging wars that had real power. Transformation, operational capacity, interoperability and costs bearing were all in the centre of attention. For the period 2002-2006, CJTF and NRF acted in parallel, but CJTF gradually lost its significance and it happened largely because the value of its engaged units was very high, becoming, to a point, unsustainable from the financial perspective. The reassessment

⁶ Allied Command Operations Blog, *The NATO Response Force – The Way Forward*, available at <http://acositrep.com/2009/08/04/the-nato-response-force-the-way-forward/>, retrieved on 17.09.2009; Interview with the Danish Minister of Defence, August 2009, available at www.informaworld.com/index/923422414.pdf, retrieved on 06.12.2010; Correspondence with a NATO Senior Official, International Military Staff, NATO Headquarters, October 2009, available at [NATO www.nato.int/docu](http://www.nato.int/docu), retrieved on 03.02.2010.

of the structures of forces, of the way of generating forces, the integrated capabilities management, as well as their funding were always in the centre of the Alliance's attention, which quietly but firmly eliminated the CJTF concept. The 2010 Lisbon Summit validated the emergence of the *new strategic concept, the new NRF concept*.

Even if member states have not agreed with the basic purpose of the response force, they all agree that the NRF has a *raison d'être* and, thus, one of the political-military instruments becomes a drive for more strategic visions.

The complex challenges of the strategic environment, the nature and character of missions that will be assigned to military structures will require new ways of thinking, planning and acting. Because of political constraints, legal influences and access to new technological capabilities, the focus will increasingly be placed on the effects that must be achieved in order to meet the strategic objectives of the campaign. As the Network Centric Warfare specific components are introduced and generalised, the operational domain of planning and conducting expeditionary operations will experience appropriate adjustments which should make it possible for the new concepts to be turned to advantage.

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NATIONAL AND INTERNATIONAL DETERMINANTS OF THE ARMED FORCES ORGANISATION

Colonel Gheorghe DIMA

Achieving the objective of reshaping the structure of command and control and the structure of forces established by the Romanian Armed Forces transformation strategy and the relevant requirements of the organisation, equipping, training and support are complex tasks which are marked by many significant national and international specific conditions determined by the regional and global security environment area, the Romanian society's stage of development, the manner in which the military are perceived, the missions are assigned and the resources are made available.

Keywords: *military organisation; national and international specific conditions; transformation; organisational strategy*

The Romanian Armed Forces, as a state institution, have to accomplish a complex spectrum of missions, from defending the state sovereignty and independence, and executing some missions beyond the national territory to contributing to collective defence. All these are stipulated in the Constitution of the country and in the normative acts related to the state defence and security.

To fulfil these missions successfully, a permanent transformation of the armed forces is necessary, aimed, correlatively, at the theoretical concepts, functional processes, structural organisation, combat technique and equipment. This aspect ensures the compatibility between the nature of the military institution and the character of the missions that may be assigned to it, in and outside the country.

The armed forces transformation process is conducted in keeping with a wide range of determinants belonging to the national, regional and global environment, with Romania's status of a NATO and EU member country, with the rapid evolution

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of scientific research and the developments in the field of military technologies, with the diversification of the risks and threats to the security of states and of the world.

Among all transformation domains, *structural organisation* represents the most visible and dynamic area, whose evolution is influenced by a series of determinants at national and international level and whose development may be appreciated as a result of the ratio between necessity and potential.

In this context, the following determinants at *national* level may be mentioned: *the dynamics of the social, economic, political, cultural and information changes in the Romanian society; the economic power of the state; the development level of military scientific and technological research and the procurement of military equipment; the options of the political-military decision-makers regarding national security assurance; the development of the strategies, doctrines, tactics and operational requirements*, as well as the ones at *international* level: *the globalisation process; challenges of the zonal, regional and global security environment; the international political-military alliances/organisations membership*.

All these influence not only the organisation of the armed forces as an institution but also the one at the level of the units and large units in the force structure.

1. National determinants of the armed forces organisation

The armed forces represent a subsystem of the global social system and, consequently, their structure, roles and statute are determined by the historical context and the evolution of society.

The transformations occurred in the security environment at the beginning of the 21st century have determined the redefinition of the armed forces role to supplement their traditional missions with the ones specific to the full range of peacekeeping operations, from preventive diplomacy to imposing and, subsequently, rebuilding peace.

The Romanian Armed Forces undergo an ample reform process that is aimed at the armed forces transformation so that they can effectively carry out the assigned missions: to defend Romania and its allies, to promote regional and global stability, to support state and local authorities in the event of civil emergencies.

Romanian Armed Forces Transformation Strategy, the document that represents the medium- and long-term vision regarding the Romanian Armed Forces size, training and equipment, establishes the major milestones in the organisational evolution and sets as one of the important objectives *Command and Control and Force Structure Remodelling*¹.

¹ *Strategia de transformare a Armatei României*, București, 2007, p. 14.

Dynamics of social, economic, political, cultural, information changes in the Romanian society

In the social system, the military are a distinct element, whose functioning can be ensured only by cooperation with all the other components (economic, political, social, legal, cultural, scientific, educational etc.), and with the society as a whole. Thus, the military are heavily dependent on the level of social development, and on the quantity and quality of the available human, material, technological, financial and information resources.

Between the civil society and the military several relationships are established: economic, legal, cultural, scientific, educational etc. Out of them, the economic relations have an important role and particularise the material relationships that are established between the armed forces, as the Romanian state institution entrusted with the task of defending sovereignty, independence and territorial integrity, and society, as a source of ensuring the human, material, technological, information and other needs, which will be allocated by the Romanian state for the country's armed defence. They determine the composition and preparation of forces, as well as their equipment with the necessary combat assets, both quantitatively and qualitatively.

At this stage of an economy in transition, and considering the deep global economic crisis, we can say with certainty that the Romanian society is unable to provide the armed forces with the resources necessary for their effective functioning within the optimal parameters.

Economic power of the state

Romania's military power is supported by the economic, financial, human, material, information and other resources. All these resources depend, to a great extent, on the funds allocated from the budget. Moreover, they depend on the state's economy, on its ability to create wealth.

The budget of the Ministry of Defence is a part of the state budget that is approved by the Parliament, and its size is established in relation to the financial needs estimated by the Armed Forces and NATO requirements (2,38% of the GDP), the Government ability to meet the society general needs, the defence ones particularly, and to the political will of the Parliament.

The budget allocated for defence in 2010 represented 1,3% of the GDP and it was subsequently modified through budget amendments. Besides, one of the main courses of action for the Romanian Armed Forces modernisation refers to the provision of the financial support by the state budget and extrabudgetary

funds, sized and substantiated through the Planning, Programming, Budgeting and Evaluation System.

The Romanian Armed Forces have as a goal the achievement of a *modern force structure, a downsized, professional, properly equipped, deployable, interoperable one, having self-sustainment and multidimensional protection capabilities*².

Structure reorganisation, military equipment and assets modernisation, training enhancement presuppose the existence of significant budgetary resources over the next period, and the way they are allocated will determine the achievement of the set objectives.

Development level of military scientific and technological research and the procurement of military equipment

The military domain represents an important direction for the implementation of the gains in science, as today the states defence capacity is closely related and largely determined by the development of science. There is no area of the military phenomenon that is not determined or even influenced by modern science, in one way or another.

The continuous improvement of military technology conditions the development and structure of the armed forces, influences the process of combat readiness, and causes changes regarding the methods and procedures employed in conducting military actions.

There are structural changes in the armed forces of all developed countries, changes that are important and long-lasting, imposed by the dynamics and changes in weapons and military assets.

Today, practically everything that is currently referred to as equipment, conventional weapons and military assets is changing fundamentally. Surfing the websites or browsing the publications related to military assets, it is easy to identify the multitude of weapons, equipment, vehicles etc. belonging to all services of modern armed forces that undergo constant changes under the impact of the contemporary scientific-technological revolution.

The development of military technologies and the equipment with high-performance military assets have generated the phenomenon of modern armed forces demassification, as far as organisation is concerned. It is grounded in the fact that combat assets are more selective in choosing targets and more precise in hitting them, while destructive effects are increasing. Information-based weapons increasingly tend to replace the volume of fire power and the objectives aimed by military

² *Ibidem*, p. 4.

actions tend to become punctiform, precisely defined and of critical importance for the enemy operational system. As a result, mass armies, acknowledged by the two world wars of the 20th century, have become outdated and inefficient.

The replacement, in the armed fight, of the preponderant nature of the quantitative dimensions with the qualitative ones implies the increase in high-performance technology, by creating some operational structures that are downsized but extremely powerful, mobile, well equipped and trained. The transition from mass armies to modern operational structures should be also seen as a logical requirement that is imposed by the economic constraints of a future war.

Options of the political-military decision-makers regarding national security assurance

In our country, the armed forces are, in conformity with the Constitution, subordinated exclusively to the will of the people and subject to the civilian and democratic control exercised by the political factor through the institutions authorised by law.

A system of constitutional and legal levers has been established to ensure the civilian democratic control over the armed forces' and the national legislation related to defence and the one existing in NATO and the EU member states continue to harmonise.

The implementation of these principles involves the following dimensions of defence policy: *quantitative* (establishes the system of recruiting and the armed forces logistic support, including the crucial question of the proportion of state resources earmarked for military needs), *qualitative* (aimed at specific aspects of the organisation, composition, equipment and movement of armed forces, including the types of assets and weaponry and the disposition of military units and large units) and *functional* (whose content is related to the use of the armed forces, and to when and how the force will be used)³.

The political factor establishes the security strategy, which, in turn, determines the way national defence is attained, independently or within a system of alliances, leading to the establishment of the military strategy, general and branches doctrine, armed forces organisation and equipment, as well as to the enhancement of the forms and procedures regarding the conduct of military actions.

Romania, a full NATO and EU member, has a statute that allows it to state that collective defence is an undeniable reality to it. Of course, this quality

³ Colonel prof. univ. dr. Mircea Cosma, *Relațiile civil-militare în societatea românească*, p. 3, at http://www.actrus.ro/reviste/4_2003/a3.pdf

does not diminish the responsibility of the Romanian state for its national defence organisation.

Romania's option with regard to ensuring national security has also determined the organisation of its armed forces, according to the purpose and readiness level, into *deployable* forces, designed to fulfil the full range of missions, according to the international commitments in the field of defence and security to which Romania is party, and *generation and regeneration* forces, designed to support the deployable forces and to achieve tasks on the national territory and in its vicinity.

International determinants of the armed forces organisation

The current state and the trends in the evolution of regional and international security environment increasingly determine the states of the world to focus on the organisation of collective defence against the risks and threats that are more diverse as far as their nature, content, frequency and intensity are concerned.

From the military standpoint, the participation of our country in a collective defence system generates a series of advantages, as the responsibilities for defence fall under an organisation that is militarily more powerful than the Romanian state exclusively.

As far as organisation is concerned, the armed forces have a series of obligations. They have to tailor the organisational structure, undergoing a multilateral, complex and continuous reform process, to thus become compatible and interoperable with the armed forces in the other countries that are included in the collective defence system.

Moreover, the armed forces, in conformity with the assumed commitments, have to establish the necessary collective defence specialised structures. Last but not least, the organisational, human, normative and military dimensions of the armed forces have to be aligned with NATO and EU common standards.

Globalisation process

Globalisation has an appreciable amount of effects, both positive and negative ones. As positive elements, the following are highlighted: amplification and liberalisation of trade, investment and financial flows, expansion of democratic values, protection of individual identity, environmental protection, as well as the "*free movement*" of security⁴.

⁴Vasile Popa, *Implicațiile globalizării asupra securității naționale*, Editura Universității Naționale de Apărare "Carol I", București, 2005, p. 13.

Globalisation has also negative effects, such as: decrease in safety level indicators, globalisation of chronic local and regional phenomena, globalisation of organised crime (weapon, drug, and people trafficking), radicalisation of ethnic and religious fanaticism, as well as of terrorism.

Global security currently depends on the military-technological revolution (which has led to the acceleration of global dynamics of armament), the globalisation of arms transfers, the current patterns of the global production of military equipment and technology, the new concentration of military power.

We can say that all states are currently engaged, to varying degrees, in a highly stratified and strongly institutionalised global military order. Military globalisation can be broadly considered a process that incorporates the expansion and increased intensity of the military ties between the political units of the global system. This process has led to a greater closeness between the centres of military power, thereby increasing the eventuality of a conflict, with the proliferation of the ability to project destructive power at great distances. Simultaneously, the time for decision-making and military response has shortened and, consequently, military machines and their permanent combat preparation have become an integral part of our modern social life⁵.

States directly involve in restructuring the global security system, in economic cooperation, and in tailoring the norms and principles of international law to the evolutions determined by the globalisation process, as well as in the activity of the UN, OSCE, EU and WTO.

Undoubtedly, an organisational construction able to generate immediate, decisive results, at operational and strategic level, especially externally, in the theatres of operations outside the usual areas of responsibility, is an instrument that plays a significant part in consolidating the global security system. In this context, the national approaches to transformation, aligned with those of NATO, for example, make the armed forces of a member state an institution characterised by great flexibility and mobility, able to conduct operations across the full spectrum of conflict, rapidly deployable and capable of carrying out network-based operations, technologically superior, fully supported logistically through an integrated logistic system⁶.

With such military capabilities – multi-purpose, suitable for deployment and support capabilities in the theatre, as well as for usability and availability –, the armed forces can perform complex tasks to maintain the territorial security

⁵ Maior Ioan Virca, locotenent-colonel Mihai Movilă, *Implicații ale fenomenului de globalizare militară asupra războaielor viitorului*, at http://www.armyacademy.ro/reviste/2_2005/a8.pdf

⁶ Vasile Popa, *Implicațiile globalizării asupra securității naționale*, *op. cit.*, pp. 40-41.

and stability of the particular state, as well as to enhance the capabilities of the Alliance to support its global interests, in the context of the diversity and maximum severity of the current century threats.

Challenges of the zonal, regional and global security environment

The zonal, regional and global security environment is, given the background affected by social, economic, political, military, information vulnerabilities, always the “target” of risks and threats that are diverse as nature and content⁷.

Most studies that tackle the problem of defining the armed forces that are appropriate to the security and conflict environment of the 21st century reveal that they differ distinctly as far as the role, structure, doctrine and operational employment concepts are concerned from the ones we know today.

The conflict environment that characterises the beginning of the 21st century and the result of the studies that address its possible evolutions in the short, medium and long term require the development of those types of forces and capabilities that can be adapted quickly to the current and especially future changes in the security environment.

Starting from this aspect, NATO member states and not only are concerned with the transformation of the military power instrument, and the main objective is to create capabilities that provide the political-military decision-makers with alternative actions that are appropriate to the new types of risks and threats not only to the national security of states but also to international security.

All studies that have addressed the problem of transformation reveal the undeniable fact that the future belongs to the forces that are lighter, faster, more numerous and that act in an integrated network. However, not only the size, number and speed are the basic elements that have value, as the value also derives from features that are aligned with another basic element – information.

The value is given by the ability of a structure to access and contribute to a higher level of common knowledge provided by the action in network, as well as by the ability to act based on that information.

As former NATO Secretary General, Jaap de Hoop Scheffer, stated, “*We need forces that are slimmer, tougher, and faster; forces that reach further, and can stay in the field longer*”⁸.

⁷ Eugen Bădălan, *Securitatea României. Actualitate și perspectivă*, București, Editura Militară, 2001, pp. 57-64.

⁸ *Understanding NATO Military Transformation*, www.act.nato.int

International political-military alliances/organisations membership

A state membership of a political-military alliance/organisation influences the missions its armed forces can receive and carry out, especially outside the national borders.

Our country's accession to NATO and the EU meant the integration in a unique security and cooperation system. Thus, Romania has become not only a consumer but also a provider of security, hence deriving a series of obligations and responsibilities our country must assume and perform.

It is evident that, to successfully cope with these new responsibilities, the Romanian Armed Forces have tailored to meet the requirements of the Alliance, the reorganisation process being indissolubly connected to the one of NATO transformation.

The Alliance requires expeditionary, interoperable, rapidly deployable forces, able to perform the full spectrum of missions and to tailor to the new combat conditions, in a complex security environment.

Meeting this requirement imposes ensuring compatibility and subsequently interoperability with the other partner armies. Entering a political-military alliance such as NATO, any member state assumes, freely, voluntarily and consciously, a set of responsibilities. These include those aimed at ensuring compatibility and interoperability with the other armed forces that are part of the Alliance. In fact, it is related to the organisational, human and normative aspects of reform in the military.

The force structure must have an expeditionary character, be able to execute several operations simultaneously at different scales, with adequate logistic support, such as: strategic transport assets, high-precision weapon systems, information, electronic, psychological and other means.

In the Romanian Armed Forces, this type of structures is represented by the Deployable Forces that are meant to perform the full range of missions, in conformity with the international commitments in the field of security and defence undertaken by Romania.

The enlargement of NATO and the European Union to the Black Sea requires new approaches, the Alliance managing security issues and the EU being responsible for the economic development. Thus, Romania, as a NATO member, has responsibilities with regard to securing the region and anchoring in the democratic ideals and values, while promoting our national interests at the Black Sea, within the Alliance.

*

The Romanian Armed Forces undergo a profound transformation process to meet the requirements proper to professional armed forces, in compliance with NATO and EU standards and with the requirements related to high-performance

technology. The armed forces reconfiguration involves, besides the organisational domain, the conceptual, functional, and infrastructural one.

For our armed forces, the issue of organisational development is as important as for the other armed forces in NATO and the EU. The political-military, economic, technological constraints and especially the budgetary ones require ingenious and flexible solutions, contingency plans and strategies, as well as close cooperation with our partners in the Alliance.

In the next decades, the armed forces structural evolution is certain. The Romanian Armed Forces organisation will follow this dynamic evolution marked by the numerous internal and external determinants that will have not only a specific influence, proper to each factor, but also a cumulative one, as the factors are interconnected and interactive.

Each factor that determines the national armed forces organisation is important. However, we can estimate that, in the short and medium term, the ones related to the *state economic power* and the *country membership of credible political-military organisations* will prevail. The state economic power is important, since it enables the alignment of the armed forces, in all respects, with the changes in society and the world, as well as the increase in flexibility regarding the approach to any type of mission, in the country and beyond. It is increasingly clear that economy has become one of the main sources of military power because it produces the necessary means for it to materialise. Technological-information power will be predominant in the future armed conflict and it will become a real military power multiplier.

The fact that the country is a member of political-military organisations fundamentally influences the options regarding the structural organisation, within the context of the objective necessity to correlate it with the one of the partner countries in order to carry out the missions assigned to national military structures, not only for collective defence but also for crisis management at regional and global levels.

Regardless of how internal and external conditions will impact on the structural reorganisation of the Romanian Armed Forces, there must be identified viable solutions, alternatives and strategies to meet the objective set by the *Transformation Strategy: the achievement of a modern, downsized, professionalised, well-equipped, deployable, interoperable force structure, having self-sustainment and multidimensional protection capabilities.*

English version by
 Diana Cristiana LUPU

STRATEGY: THE SYNERGY OF THREE.

STRATEGY: MORE THAN THE SUM OF THREE

Colonel Daniel PETRESCU

In the author's opinion, strategy is an intellectual and practical endeavour, encompassing the art and science of achieving vital interests by an individual, organisation, state or international entity, usually against an opponent, through a comprehensive process of defining ends, articulating ways, developing and employing means, in an integrated manner and with a long-term perspective.

The development of strategy proves to be an equally practical and intellectual endeavour.

To conclude, the author writes that the essence of strategy rests on a comprehensive, integrated relationship between ends, ways and means.

Achieving a vital interest, be it at individual, state or multinational level, can only be done through a comprehensive process of defining ends, articulating ways, developing and employing means, in an integrated manner and with a long-term perspective.

Keywords: *strategy; means; ways; ends; synergy; comprehensiveness; integration*

From pop culture to serious scholarship, people use “strategy” – “business strategies, coaching strategies, financial strategies, and research strategies”¹. It has become a modern cliché to quote, question or criticise strategy regarding not only issues related to its traditional meaning (i.e. wars in Afghanistan and Iraq), but also concerning the financial crisis, fighting global warming, domestic security, running for a political office, finding a job or planning your life. Search Amazon.com for books on “strategy” and you will find nearly 110 000 titles listed². Search the Internet, and you will find more results on business strategies than on military strategy³. However, when it comes to definitions, both people and scholars have different opinions. From scholars only, Terry Deibel summarises thirty-seven different definitions⁴.

In fact, strategy is an intellectual and practical endeavour, encompassing the art and science

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¹ Mackubin T. Owens, *Strategy and the Strategic Way of Thinking*, in *Naval War College Review* 60, no. 4 (Autumn, 2007), p. 111.

² Search on <http://www.amazon.com/> conducted on 30 August 2010.

³ To be precise, the search using keyword “strategy” (http://www.google.com/search?hl=en&source=hp&q=strategy&aq=f&aqi=g10&aql=&oq=&gs_rfai=CbQ0dlpN7TNnqCamMzATemfRgAAAAqgQFT9Dg93E) listed 200 000 000 results on 30 August 2010. A search using different keywords, that day, identified the following results: “grand strategy” – 10 300 000 results, “military strategy” – 11 700 000 results, “business strategy” – 135 000 000 results, “coaching strategy” – 10 900 000 results, “financial strategy” – 59 800 000 results, “coaching strategy” – 10 900 000 results.

⁴ Terry Deibel, *Foreign Affairs Strategy. Logic for American Statecraft*, Cambridge University Press, New York, 2010, Appendix B.

of achieving vital interests by an individual, organisation, state or international entity, usually against an opponent, through a comprehensive process of defining ends, articulating ways, developing and employing means, in an integrated manner and with a long-term perspective. The most important part here is the emphasis on the comprehensive, integrated relationship that characterises the correlations between ends, ways and means.

How could someone support this view? First, by explaining the definition. Second, in the theoretical realm, by considering and explaining the role and importance of every element of strategy. And finally, in the practical realm, by illustrating conclusions with relevant examples. Here, a review of the evolution, characteristics and results of the various US administrations' strategies after the end of the *Cold War* proves the importance of a good balance between ends, ways and means in foreign affairs.

This new attempt to define strategy is justified not only because the term has evolved but also because the lack of common definition proves that previous research has failed to take into account certain nuances. This attempt aims at emphasising the essence of strategy. As a basic requirement, the new definition observes the following general rules: maintains the essential nature of the issue, is universal and affirmative, admits only elements in the definable form, arranges them in the right order, and does not omit such elements⁵. Moreover, it tries to eliminate limitations of previous definitions, which are: "1) *war-oriented rather than general (...)*; 2) *too narrowly focused even within the wartime realm (...)*; 3) *even in the military arena, are too focused on one aspect of a multidimensional problem*"⁶.

This new definition takes into account not only nation-states or international entities, but also individuals and other organisations, be they economic, political or non-state actors. It mentions the role of the opponent and emphasises science and art as two interrelated perspectives. Therefore, the definition is not biased. It does not focus solely on "how" (ways), but considers ends establishment as an equal part of a strategy. It also suggests that sometimes, building means could become an end in itself. As even in a battle you coordinate ways, means and ends, the mention of vital interests and long-term perspective are important to differentiate strategy from tactics and operational art.

⁵ See Juan C. Sager (editor), *Essays on Definition*, John Benjamins Publishing Company, Philadelphia, PA, USA, 2000.

⁶ J. Bartholomees, Jr., "A Survey of the Theory of Strategy", in *US War College Guide to National Security Policy and Strategy*, 2nd edition, June 2006, pp. 79-82.

In spite of its advantages, this definition may be criticised for being too broad, long and complex. Trying to be comprehensive, it uses a series of elements which need to be explained on their own (vital interests, comprehensive manner). It leaves outside some other elements, equally important for the strategic thinking (strategic environment, strategic assumptions, opportunities and threats, power). Moreover, not pointing out the relative importance of a certain element (i.e. art or science, or ways, means or ends), the definition might seem without consequence. This criticism needs to be addressed.

One argument against these critics is that a definition is only an introduction to a theory that can be further elaborated. In this particular case, defining other elements will be the scope for the theory of strategy. This theory will further explain strategy as science and art, will analyse particular elements and reveal principles, will discuss examples and draw lessons.

A second argument is that, stressing the need for a comprehensive and integrated manner in approaching the relationship between ways, ends and means, the definition suggests that strategy is about the proper balancing and integration rather than holding an individual element as the most important one. This approach offers depth, pragmatism, and flexibility in thinking. Some must resist the temptation to differentiate or rank the importance of “*ways*”, “*means*” or “*ends*”. Placing the emphasis on comprehensiveness and integration gives all elements, if not the same importance, at least the acknowledgement that their relative importance should be considered on a case by case basis. It approaches strategy as a whole, which is more than the sum of its parts.

Ends are probably the most intellectual part of the strategy. They are important because they define the desired future state and provide the level of ambition for strategy. They determine what the strategy is about, but cannot be ranked first, because their value is debatable when not carefully correlated with the available means. The League of Nations during the interwar period is an example of failed strategy in spite of good ends. The case of Abu Ghraib prison is also an example that proves how unacceptable ways could compromise the noblest goals.

Ways are important because they reflect the essence of strategy as both an intellectual and practical endeavour. It is human nature when a problem arises to ask first “*how*” to solve it. Consequently, ways are the most examined when a strategy is evaluated (acceptability – it is a particular test, but there are other tests, too). But even though ways might seem as the main practical product of the strategic thought, they cannot rank first, because they have limited value

when serving wrong, narrow or undesirable ends. They are also intrinsically connected to means. There is no way to achieve an end without proper means, no matter how innovative the strategy is. An example is the US military strategy for the 2nd Iraq War. In its ways, the strategy made the best use of the available resources. But the available resources were not enough for phase four – stabilisation; consequently, the strategy has not succeeded within the desired timeframe.

Means are important because they provide the ability to act and account for the sustainability of your strategy. Their availability determines the ends and the ways, but they cannot rank first either, because they have only a potential value, unless best employed by ways. They are mere tools: whether “*best*” or “*less than best*”, the means are inert objects or capacities until applied in some “*way*”. They change in time and can be modified as a result of the rationality of your strategy. You simply decide you need a certain mean and you go for it – again, as part of ways in your strategy. Vietnam is a case of a failed strategy in spite of plenty of means used.

There are also at least two other reasons in not pointing out a master element. One is the lack of historic evidence that a strategy worked when only one element was appropriate, or that a single element saved a flawed strategy. The other is the fact that there is no evidence of a strategy having only one element wrong, while others were right. When something was wrong, it was because of some combination of these three elements: ends and means, ends and ways, ways and means, or simply, all of them.

In affirming this, we get finally to the practical realm. A review of the evolution, characteristics and results of the various administrations’ foreign affairs strategies after the end of the *Cold War* proves our thesis. It reveals that ends, ways and means, successfully correlated, made for a good strategy. When things went wrong, there was always a combination of flaws.

In Diebel’s opinion, the last President of the *Cold War* period is an example of successful flexible correlation of ends, ways and means: “*Reagan was willing to change his assumptions when condition warranted, able to seize the opportunity for dramatic, negotiated settlements when the opportunity appeared*”⁷. What followed has not risen to the necessary standards.

George H. W. Bush’s strategy was not consistent in its ends and means with regard to the particular cases of the policy towards China after Tiananmen

⁷ Terry Deibel, *op. cit.*, p. 363.

massacre, the slow and inadequate response to support Gorbachev's reforms and the newly established market democracies in Eastern Europe. As he was "*unable to find a strategic concept that could integrate American statecraft in the post-Cold War era*"⁸, it is debatable whether George H. W. Bush has really had a foreign affairs strategy.

The Clinton administration's strategy successfully integrated ends, ways and means in achieving the first wave of NATO expansion and also succeeded "*in a major humanitarian gamble in Kosovo*"⁹. On the other hand, it failed to engage decisively when confronted with the destruction of the US embassies in two African countries, the World Trade Center bombing and the attack on the USS Cole. Clinton did not find the right correlation between *ends* and *ways* when related to Somalia, China, Haiti and Bosnia. They all were "*expansive goals (...) without carefully considering the availability and costs of the means necessary to their accomplishment*"¹⁰.

George W. Bush's foreign affairs strategy is a classical example of flawed *ways* and *means* (unilateral approach, emphasis on pre-emption and excessive usage of military force to change other states' behaviour). Its decisions were short-sighted, made on the basis of contributing to the war on terror and made for a worse situation¹¹. A study by M. Ducie brings to the forefront the example of the US support for the Ethiopian invasion of regions of Somalia (July 2006), in an attempt to route out suspected al-Qaeda supporters. It destabilised an already failed state and expanded another threat, sea piracy, "*making the waters off the horn of Africa the most dangerous in the world requiring a multinational deployment of naval forces*"¹².

That said, the development of strategy proves to be an equally practical and intellectual endeavour. As much as ends would be scientifically developed, and means scientifically calculated, making strategic assumptions and establishing the most suitable ways is equally an art. Nevertheless, achieving a vital interest, be it at the individual, state or multinational level, can only be done through a comprehensive process of defining ends, articulating ways, developing and employing means, in an integrated manner and with a long term perspective.

⁸ *Ibid.*

⁹ *Ibid.*, p. 364.

¹⁰ *Ibid.*, p. 364.

¹¹ M. Ducie, M.A., *A Return to Realism: The Failure of the Bush Doctrine as a Paradigm for United States Post-Cold War Foreign Policy*, The University of Regina (Canada), 2009, pp. 113-114.

¹² *Ibid.*

As proved by history, the essence of strategy rests on this comprehensive, integrated relationship between *ends*, *ways* and *means*. Or, otherwise, there is no strategy without the synergy of the three.

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CHANGES IN THE MAN-MACHINE RELATION - military actions in outer space -

Colonel Nicolaie BUZATU

The author presents the man-machine relation in the future warfare, as a direct consequence of scientific and technological progress.

In this context, high-performance technology, the new characteristics of the battlefield and, certainly, the new principles, forms and procedures in preparing and conducting military actions in all types of environment, outer space included, are approached. Moreover, the fact that the increasingly complex and sophisticated armament and combat assets require that the future combatant should be better trained and educated is emphasised.

In conclusion, it is shown that the “dialogue” between man and machine is one of paramount importance within the man-machine system and, no matter how “intelligent” robots may become, they should remain under human command.

Keywords: *automated device; space technology; man-machine system; outer space; combat assets*

In the current context, generated by the scientific and technical progress worldwide, more and more military thinkers adopt a new attitude towards the man-machine relation in the future warfare. The miniaturisation of electronic devices and the increasing integration of the products of nanotechnology and artificial intelligence in the new weapons and ammunition will inevitably lead to the growing automation of warfare. While the first Gulf conflict (1991) gave a major boost to Remotely Piloted Vehicles – RPV, the Second Gulf War (2003) stimulated the international demand for Unmanned Aerial Vehicles – UAVs, which increased almost exponentially, and their utilisation has become quasi-indispensable for the preparation and conduct of military actions of any kind, and mainly against insurgents and guerrilla fighters. These platforms are equipped with assets meant to reconnoitre, collect and disseminate a variety of information (signals, images, moving targets etc.)¹ or to execute fire to completely destroy the ground targets.

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¹ Virgil Ristea, *Considerații privind importanța puterii aeriene în mediul operațional viitor*, in *Impact strategic*, no. 1, 2011, p. 92.

Comparing the evolution of the armed forces to the one of economy from the standpoint of technological progress implementation we can notice some similarities. Thus we see that in the economies where labour is cheap there is little if not inexistent concern for the automation of processes while, as labour costs are increasing, automation, in general, and robotisation, in particular, become competitive and therefore beneficial. The same reasoning is valid as far as the armed forces are concerned. The armed forces that have much manpower that is inefficiently paid are less concerned with technological replacements. In turn, the armed forces that have well-paid and highly-qualified professionals consider the use of cutting-edge technology in the battlefield as an indispensable condition to gain victory.

On the other hand, the proliferation of nuclear, biological and chemical weapons worldwide increases the likelihood of their use (controlled or accidentally), and battlefields become too harmful for human factors. This situation has stimulated the emergence of the concepts that forecast the use of some “robot warriors”² specially designed to act in such environments. Although, apparently, the utilisation of robots is a salutary idea to reduce the risks related to fighters exposure to contaminated environments, in reality, it is extremely dangerous, as it reopens some appetite for developing strategies to use the weapons of mass destruction (WMD), considering that people will be less affected. It seems there are people who are not fully convinced that a confrontation that employs WMD, especially the nuclear ones, will end without losers or winners³.

It is well-known that the cosmic environment is hostile to the existence of life, due not only to the harmful effect of cosmic radiation and absolute coldness but also to the lack of oxygen⁴. That is the reason why special measures are taken when astronauts conduct activities outside the spacecraft (they wear space suits, reduce working hours etc.). This aspect determines extensive research on replacing man with automated devices or intelligent robots, especially when it comes to the use of outer space for military purposes, under its different aspects (reconnaissance, anti-satellite fight, repair of space assets, transport of various materials and substances, fuels for rocket engines etc.)⁵.

² Alvin and Heidi Toffler, *Război și anti-război. Supraviețuirea în zorii secolului XXI*, Editura ANTET, 1995, pp. 132-136.

³ Cf Henry Kissinger, *Diplomația*, Editura BIC ALL, București, 2007, p. 511.

⁴ Cf Dr. Marin Anton, colonel dr. Constantin Cristescu, *Îndreptar de medicină și psihologie aeronautică*, Editura Militară, București, 1976, pp. 12-32.

⁵ Alvin and Heidi Toffler, *op. cit.*, p. 134.

It seems that “*intelligent automata*” may replace people to steer spacecraft or even to build them but at least an exception remains: in the field of intelligence. A machine, no matter how enhanced it may be, can never surpass its creator in this field. At the current stage of the society development the explanation is quite simple: any machine, no matter how complex it may be, can react only within the limits of the programmes and performances that have been implemented in it, namely of the information it possesses or receives.

The automatic device (machine, system, automated complex etc.) represents, in relation to cybernetics, a system capable of conducting activities that have a well set goal. There are, of course, qualitative differences between its possibilities and the ones of people: while man conducts any activity consciously, machine is a simple performer of only the activities it has been programmed to do by the one who has conceived or used it⁶, therefore unconsciously.

The psycho-physiological processes that occur inside the human body during any activity are fundamentally and qualitatively different from the ones occurred inside the most perfect machine or the most intelligent robot. However, we notice some common aspects as far as the activities of man and machine are concerned. Some of them are derived from the particularities of the two components of the system “*man-machine*”. Thus a machine (robot) may get to and act (perform activities) in the outer space without being confronted with the same problems a human being is, related to vacuum, emotions, radiation, fatigue, imponderability etc. On the other hand, man cannot be replaced when a decision has to be made in a situation that could not be anticipated by a programme that was previously implemented in the memory of the machine.

In the field of space technology, it is more complicated and expensive to build a spacecraft to carry a man or a crew in the outer space than a cosmic robot, provided with the most sophisticated devices for reconnaissance, counter-hitting, communications etc.

Besides low cost and avoidance of complex survival systems, space robots have also other incontestable advantages. Only one example in this respect is edifying: while the nervous impulses in the human body have a speed of almost 100 m/s (to respond to the external stimuli a man needs at least 0,12-0,25 s), a machine has systems through which electric impulses are transmitted at the speed of electromagnetic waves propagation, namely 300 000 km/s, fact that is translated in an almost instantaneous reaction time⁷.

⁶ Florin Zăgănescu, *Cosmonautul – un supraom?...*, Editura Albatros, București, 1985, p. 78.

⁷ *Ibidem*, p. 79.

Within the man-machine system, the “*dialogue*” between man, as the leading element, and machine, as performer, is one of paramount importance. Although globally there is a fiery debate on the superiority of the man or machine, we consider that in the field of action in the outer space the preponderant role played by man should not be underestimated.

Modern astronautics could not exist without electronics, namely without microprocessors, elements that are present in the structure of each and every computer, without which no space flight and no space mission can be conceived today. Experts in astronautics have built “*intelligent robots*” that have replaced astronauts in dangerous missions, very far away, from which they cannot come back to Earth. We owe important discoveries to these robots, including the way open to man towards unknown and dangerous areas of the outer space. It is the case of automatic lunar stations *Ranger*, *Surveyor*, *Luna*, *Lunohod* or of the interplanetary stations *Pioneer*, *Venus*, *Mariner*, *Mars*, *Viking*, whose results have once more brought into question the issue of replacing man everywhere in his work to conquer the outer space⁸. To this question, the only answer we have is a negative one, as it is a field in which man can never be replaced, namely human intelligence. For instance, there are satellites capable of discovering, recording and transmitting information about the sources of light radiation emitted from different points on the globe that are surveilled by a particular satellite during the day or the night, when the weather is good or bad. If the satellite is designed for military purposes, it may provide important information regarding the places from which ballistic missiles are launched, sources being difficult to distinguish between them (furnaces, factory chimneys, other industrial activities), but the main role with regard to interpretation and decision is held by man. There have certainly been remarkable results in the field of robots self-correction and even self-repair, but in space the perfect functioning of all the equipment, especially in the case of computers, is a major requirement. For instance, the US space ships and the Russian space stations are provided with four main computers, out of which one is meant to track and correct the functioning of the other three⁹.

Realising that, in the man-machine relation, man has the dominant role, former US President Ronald Reagan appreciated¹⁰ that “*the USA has to be capable of protecting the operations in the outer space and of preventing the enemy from using the own space systems*”¹¹, which, in the case of a conflict, would be very dangerous.

⁸ *Ibidem*, p. 81.

⁹ Florin Zăgănescu, *op. cit.*, p. 83.

¹⁰ Constantin Teodorescu, Sorin Topor, *Studiu privind folosirea spațiului cosmic în scopuri militare*, Editura AISM, București, 2003, p. 28.

¹¹ *Ibidem*, p. 29.

Such tasks can be achieved only by space shuttles that should be provided with the necessary assets and equipment as well as manned to conduct combat operations. Therefore the role of man is once more emphasised as dominant in relation to the employed technology. In this regard, during space shuttle flights, projects related to conducting combat operations in outer space could be tested, such as:

- possibility to launch anti-satellite satellites;
- recovery of satellites from the orbit to check and restore combat capability (rearm, refuel, modernise);
- test some combat assets meant to counter satellites (directed-energy particle beams, high-power lasers, rapid paint containers etc).

No matter how perfect military technologies may be, they also have some limitations. For example, the systems that command, control and track satellites and space shuttles are among the most vulnerable components of military assets in space and out of them, the stations that receive, record, process and store the data provided by adversary satellites are the first to be destroyed (decommission, neutralisation), especially by a special forces attack or a nuclear one (as the nuclear electromagnetic impulse destroys or blocks electronic devices). This goal is determined by the role of the particular stations that, if decommissioned, block the information flow from the sensors of space assets to the political-military and military decision-makers and from them to the combat forces and assets.

Man plays an indispensable part, especially in the case of damage to the spacecraft systems, namely as far as achieving safety in their operation is concerned. There are numerous examples in this respect: John Glenn¹² took the command of "*Friendship 7*", as the automated system failed. He succeeded in landing safely, using the manual descent control devices; also, the odyssey of "*Apollo-13*" moon craft and the transformation of the lunar module "*Aquarius*" in a "*rescue boat*"¹³ etc.

One of the most important factors that favour the rapid implementation of cutting-edge military technology in military actions is represented by the change in the attitude of the public towards the acceptable levels to "*generate*" casualties. The concept of "*zero casualties*"¹⁴ gains more and more ground in the military actions planning and conduct, and this objective can be achieved only by target detection

¹² US astronaut (NASA), born on 18.07.1921, performed the first American space flight on 20 February 1962, piloting Mercury Atlas-6 (Friendship-7) spacecraft; cf. general-maior ing. Dumitru Andreescu, *Enciclopedia programelor spațiale*, Editura Militară, București, 1979, p. 264.

¹³ Florin Zăgănescu, *Cosmonautul – un supraom?... , op. cit. , p. 83.*

¹⁴ Dr. Teodor Frunzeti, dr. Vladimir Zodian, *Lumea 2007. Enciclopedie politică și militară*, București, 2007, p. 16.

devices and striking devices that allow for insignificant deviations from the engaged targets (a few tens of metres for high-calibre bombs and a few centimetres for small-calibre cannon projectiles etc.), and by the precise identification of targets no matter the weather conditions and the environment (hurricane, jungle, desert, forested mountainous terrain, delta etc.). Besides these technological aspects, one should take into account the replacement of human combatants with robots to defuse mines, improvised explosive devices or to attack some targets highly guarded by fire assets. Soon after the end of the first Gulf War, Henry C. Yuen (the inventor of V.C.R. Plus – Video Cassette Recorder device), asserted that “*one of the main objectives in developing some new types of weaponry should be the reduction or total elimination of human risk. Briefly, the weapons or equipment that faces destruction at the enemy’s hand should be unmanned, if possible*”¹⁵, namely totally automated or robotised. Military strategists could be delighted, at first stage, with the perspective of using artificial intelligence, virtual reality and other competitive technologies to prepare and conduct military actions. Analysing what is to happen, there is concern about the possible answer to the question: *How intelligent should these systems be?* Although it seems to be a false problem, it is a fact that concerns not only war and peace but also the possible subordination of human race to hyper-intelligent and increasingly self-aware killing robots, capable of recovering their “*vitality*” and, why not, of self-replicating. It may mark the emergence of a new type of ideological conflict, based on the assumption that robots execute the action while the decision belongs exclusively to man now, but, in the distant future, it is possible for the roles to be reversed?! To this concern, one more is added, namely that, lacking in moral consciousness and without fear of suicide missions, robots could be ideal terrorists. The difference between people and robots is that “*if people go crazy, maybe there is time to stop them or to limit the consequences of their actions. Things may change if we provide robotic weaponry with superhuman intelligence, giving them the possibility to make instantaneous choices, to learn and to communicate each other*”¹⁶. In this field, astronautics is currently acclimatising to one of the most spectacular stages in the evolution of man-robot relation on the orbit: cooperation between astronauts and remote-controlled manipulators to refuel, repair damaged satellites on the orbit or bring them to land to repair and relocate them on orbit, as well as to assemble different space modular structures. It is quite sure that this spectacular stage will be developed once individual platforms to travel in space are achieved, based on the already gained experience

¹⁵ Alvin and Heidi Toffler, *op. cit.*, p. 134.

¹⁶ *Ibidem*, p. 142.

employing individual means of the type of “*flying armchair*”. In fact, the concept of “*flying armchair*” is a 20th-century copy of the famous armchair used (as the legend says!) by the courageous mandarin Wan-Ho, who hoped that, using 49 powder missiles, he could fly to... the Moon, and it originates in the research and experiments that have been conducted by the Americans since 1996, on the occasion of “*Gemini 9*” mission¹⁷.

The technological progress in the 19th century announced decisive changes in studying space. Jules Verne’s imagination in the novel “*Autour de la Lune*” (“*Round the Moon*”) forecasts the great “*adventure*”: a 300-metre-long cannon would have launched a space shuttle and inside it passengers suffered from the unknown effects of imponderability¹⁸.

Jules Verne’s observations and appreciations regarding the necessary speed to overcome gravity, the trajectory correction but especially the construction of space ships were prophetic, as it is shown in the comparative analysis of his forecast and the data provided by “*Apollo-8*” mission¹⁹, presented in *table 1*²⁰.

Position Parameters	Jules Verne	Apollo-8
Launching station	Florida (SUA)	Florida
Crew	3 people	3 people
Spacecraft shape	Shell	Missile
Weight	5 347 kg	5 621 kg
Length	3,65 m	3,65 m
Speed	40 000 km/h	38 988 km/h
Construction	Cast iron aluminium backed	Aluminium alloy inside the spacecraft
Braking system	Retrorocket	Retrorocket

Table 1: Comparative characteristics of Apollo-8 spacecraft and the one anticipated by Jules Verne

The fact that the armament and combat assets become more and more sophisticated and complex require that the future combatant should be better trained and educated. Tomorrow soldier high professionalism has to be perceived as a vital necessity and not as a desire. In fact, this requirement is very well noticed by Alvin Toffler, who appreciates that: “*He [the fighter – A.N] understands the tactics of both infantry and mechanised devices. He is good at operating both helicopters and fixed-wing aircraft as he is often the control agent. Guiding aircraft means*

¹⁷ Florin Zăgănescu, *op. cit.*, pp. 221-222.

¹⁸ Carmen Cloșcă-Grigore, *Era cosmică și Terra*, Editura Albatros, București, 1987, p. 25.

¹⁹ *Ibidem*, p. 25.

²⁰ *The Military Balance*, Routledge, International Institute for Strategic Studies, London, 2010, at <http://www.routledge.com/books/details/9781857435573/>

*understanding surface-to-air weapons. He is good at geometry and navigation to guide mortars and artillery, at armoured and anti-armoured vehicles, at mining and counter-mining armament and tactics, at using detonators, computers, lasers, satellite communications equipment, and the organisation of quartermaster and logistics is part of his arsenal. Mindless warriors represent a species in danger of extinction*²¹. Therefore, this aspect regarding future combatants training should not be neglected by any army, as they will be able to use very sophisticated combat assets, although the cost of their training and maintaining the minimum necessary level is high.

In conclusion, we express our conviction that, no matter how competitive combat assets may become, we should not exclude the human factor in the man-machine combination, there is a risk that a possible war may get out of control.

English version by
✍ *Diana Cristiana LUPU*

²¹ Alvin and Heidi Toffler, *op. cit.*, p. 25.

CURRENT MANAGEMENT OF LAND OPERATIONS AT TACTICAL LEVEL IN ISAF

Colonel Ovidiu Constantin PALAGHIA

The author takes an approach to the military conflict in Afghanistan, especially as far as land operations at tactical level are concerned, wondering whether any spectacular developments will occur in 2011 in the battlespace.

He points out the significance of a robust and flexible command and control system, able to face the challenges of the land, given the circumstances of a huge theatre of operations (a country with 34 provinces), with almost nonexistent infrastructure and support of the local community. Within this complex system, the Combined Joint Operations Centre (CJOC), settled in Kabul since 2006, is a key element in providing timely information to the Joint Command Mission (Mission Commander – COMISAF) to ensure the decisions to be made, in compliance with an accepted mission, which is to lead operations in partnership with the Afghan Government, in cooperation with the operational expeditionary force, the UN Assistance Mission in Afghanistan (UNAMA) and the international community for promoting stability and continuous development in Afghanistan.

Keywords: CJOC; ISAF; UNAMA; COMISAF; JFC; IED

Throughout history, people have always been torn by wars, caused by various reasons: the desire for power, elimination of enemies or competition for scarce resources in a given region.

The nine-year war in Afghanistan is causing ever more victims, among both NATO troops and Taliban opponents and, unfortunately, among Afghan civilians. The war in Afghanistan was launched in autumn 2001, after the 11 September attacks on the twin towers in New York, when the US requested the activation of Article Five in the Alliance Charter, which stipulated that when a member state was attacked, the other member states would be obliged to help. Following the terrorist attacks of 2001, US President George Bush declared the “*Global War on Terror*”. With an overwhelming military superiority, the United States together with the UK and other allies attacked Afghanistan and ousted the Taliban regime.

The intervention in Afghanistan was considered perfectly legitimate, NATO was in a position of “*casus belli*”, i.e. an event justifying a war, and received approval by the resolution of the UN

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Security Council. The stated goal of the invasion was the capture of Osama bin Laden, the attempt to destroy al-Qaeda and remove the Taliban regime, which provided support and hosting for terrorist groups. War was unexpected and got further and further away from overall victory, requiring new forces engaged in combat. A country torn by conflict, Afghanistan is a land without great resources and wealth to tempt the world powers. However, it has been a region of constant conflict.

With NATO's intervention, the Taliban dictatorship in Afghanistan was toppled. A temporary success was that the Taliban, al-Qaeda allies, withdrew to the mountainous region bordering Pakistan, waging a guerrilla war. Victims among NATO forces, as well as among civilians have increased.

The government installed by the Americans in the capital Kabul has controlled only the areas around cities, while other areas, especially in mountainous regions, have been out of control, being under the influence of chiefs of tribes. The region has faced the best equipped army in the world, NATO troops, with a heterogeneous force, opposing the Taliban, former Mujaheddin, Arab mercenaries and others, all of them, of course, under the banner of al-Qaeda terrorists. US General David Petraeus, in his analysis of the situation, told the *Foreign Policy Magazine* that the war in Afghanistan "will be the longest campaign of the long war".

"The security situation in Afghanistan is precarious, and the possibilities for intervention and protection from local authorities are very low. The terrorist activities in Afghanistan are taken almost daily and they frequently consist of bombings, suicide attacks, kidnapping and armed attacks", according to the website of the Romanian Ministry of Foreign Affairs (MFA).

Troops in Afghanistan come from 48 countries, totalling 131 730 troops, of which most are Americans – 100 000, in the mission field of the *International Security Assistance Force (ISAF)*. The country with the smallest level of troops deployed in Afghanistan is Austria, just three people. Romania has deployed nearly 2 000 soldiers in the theatre of operations.

So far, 345 billion dollars has been spent by the US in the war in Afghanistan since 2001, according to Reuters. Only humanitarian aid has cost the US 17 billion dollars. In 2014, President Obama intends to withdraw troops from Afghanistan.

When it comes to costs, however, mentioning the death toll is a very sensitive issue in a theatre of operations. In total, 701 ISAF soldiers in Afghanistan died in 2010, of which only 493 were US soldiers. Since 2001, 2 271 people have died in the Afghan theatre of operations, according to the independent website *icasualties.org*. The number of Romanian soldiers killed in Afghanistan has reached 19 this year. In addition, more than 50 Romanian soldiers have been wounded since the beginning of the mission.

The question is: *What will happen in 2011 in Afghanistan?* “*The conflict will remain active in 2011, no spectacular developments on either side of the barricade*”. The geographical position of this country will always keep alive the interest of great powers to stay in the region. The US and NATO war against terrorism will continue in order to eliminate the al-Qaeda terrorist network, trying to bring it to disintegration. Through the presence in Afghanistan, the Washington Administration establishes direct contact with the opponent and, at the same time, but perhaps more importantly, ensures a foothold in a sensitive geostrategic area.

In a huge theatre of operations (a country with 34 provinces), with almost nonexistent infrastructure and support of the local community (HNS), NATO is leading a multinational force of about 150 000 soldiers, commanding contingents from 48 countries and being forced to cooperate with over 400 agencies and international and non-governmental organisations, in extremely hostile terrain and conditions, where between 500-900 incidents and attacks (fights) are caused mainly by insurgents weekly. USA could not do this without a robust and flexible command and control system, able to face the challenges of the land, especially now when it has switched to a new phase of operation, the transition period.

Within this complex system, the Combined Joint Operations Centre (CJOC) settled in Kabul since 2006 is a key element in providing timely information to the *Joint Command Mission (Mission Commander – COMISAF)* to ensure the timely decisions to be made, in compliance with an accepted mission, which is to lead operations in partnership with the Afghan Government, in cooperation with operational expeditionary force, the UN Assistance Mission in Afghanistan (UNAMA) and the international community to defeat insurgents, creating a safe and stable living environment, in order to extend the control of the Afghan Government in other regions and to create conditions for promoting stability and continuous development in Afghanistan.

CJOC mission is to provide the operational command and control of the subordinated components, with the purpose of monitoring, coordinating and synchronising business facilities and agencies that support the mission control group. CJOC provides warning and situational needs to allow timely decisions to be taken by the COMISAF, in accordance with the operational requirements established by the Joint Operational Command in Brunssum.

CJOC main functions include, but are not limited to: controlling operations of subordinated components (Regional Headquarters North, South, East, West, Central and Special Operations) in accordance with guidelines and targets established by COMISAF, acting as a focal point for information and assigned operational tasks, monitoring, synchronisation and coordination of joint forces, resources and related

items, monitoring and evaluating the *Joint Common Operational Picture (JCOP)*, ensuring timely reporting, maintaining situational awareness for the benefit of the command and control group, using sources of cells and the information provided by the fusion centre, which gathers, records, processes and transmits data and information necessary to make timely military decisions.

The ISAF CJOC comprises over 130 soldiers that are organised in cells/working stations, according to the operational needs as follows: The “*Bridge Cell*” (CJOC Director, the head of operations and the shift director), *the JCOP management cell*, *the information fusion centre* (experts in information), *the cell for countering improvised explosive devices (CIED)*, *the fire support cell*, *the air operations cell*, *the operational information cell in support of air operations centre*, *the recovery and medical evacuation cell for the recovery of the personnel on the battlefield*, *the systems management cell* (situational awareness, communications and computers), *the Land Forces liaison elements* (from Regional Headquarters), *the NCOS staff cell*, responsible for updating the current situation (watchkeepers), other experts or representatives from other structures and directorates of the ISAF Headquarters.

There are other experts and representatives responsible for the following areas: operations and plans, reports, coordination of air logistic support elements, engineering, logistics, CIMIC, electronic warfare, items related to National Quotas, other factors such as those dealing with weather forecasts or coordinating the air attack assets (fixed and rotary wing).

The shift director is responsible for monitoring, evaluating and reporting data about the current situation, monitoring incoming messages, setting measures and actions that require the preparation and submission of RFIs (request for information), reviewing the content of reports submitted to higher echelons, coordinating the CJOC with the Director, preparing and presenting briefings about the current situation.

Main ISAF RFIs pursue specific concerns: death, injury, capture or kidnapping of any ISAF military and Afghan leaders, civilian losses, ISAF aircraft shot down or ground attack, IED, insurgent ground-air attack or attacks on convoys and ISAF troops, international organisations operating in the theatre of operations, fratricide, natural disasters and the effects produced, confirmation of the killing, capture, detention of insurgent leaders, as well as incidents and events that attract media attention.

CJOC operations chief is responsible for: supervising and coordinating all activities within CJOC, assessing the current situation and assigning tasks, coordinating Regional Headquarters, overseeing the preparation and submission of reports, coordinating the development of COMISAF current information and presenting whenever needed the current issues and general conduct of ISAF operations.

The NCOS staff cell is responsible for updating the current operational situation, recording and evaluating details of incidents and events reported, arranging for the transfer of data between different systems (chat, IGEOSIT, telephone, radio etc.) and providing timely information for the Head of operations on such incidents and events that could influence the course of operations and every aspect of the operations management.

CJOC supports certain actions and structures at different levels, as follows:

- *at the tactical level*: medical evacuation, air support, identification, discovery, research and surveillance actions;
- *at the operating level*: revising plans and policies, and changes of priority in the conduct of operations;
- *at the strategic level*: liaison structure provides information and public relations to counter negative media and messages and provides correct information regarding incidents and events or actions performed.

Incidents and events occurring unexpectedly trigger the activation within 30 minutes of emergency response teams that will act together with other representatives of the Commander of ISAF, the Afghan Government representatives, other organisations and international agencies. The team is notified by e-mail through the ISAF network, public telephone or post, its activation and composition being decided by the COMISAF deputy director for operations or CJOC.

CJOC Director informs the Command Group within 15 minutes, based on details obtained from the INCSPOTREP (Incident Spot Report) watchkeepers, COMISAF and Joint Operational Command (JFC) in Brunssum. The watchkeepers get information about the event or incident, inform the CJOC Director, receive and record the INCSPOTREP, develop RFIs to JFC Brunssum, posting details on the CHAT system and coordinating the operations with the CJOC Director.

CJOC includes daily routine, information briefings such as COMISAF current information (general aspects of the situation, intent and guidelines of Higher Echelon), FragO (Fragmentary Order), incoming enemy situation, their troops, elements of employment in the operation of the subordinated headquarters, major media messages, evaluation reports on the general staff, important planned visits, key events, as well as direction and guidance for COMISAF, meetings of various working groups (Joint Operations Planning Group-JOPG, Information Operations Coordination Board-IOCB), committees (Joint Coordinating Body-JCB) and video-conferencing-specific operational headquarters.

Key activities include specific information about the current situation (the stage of the current operation every 12 hours), the information received from the Regional Headquarters such as Assessment Reports – ASSESSREPs and Situation Reports – SITREPs and preparation/submission of the ISAF reports to JFC Brunssum

and SHAPE (SACEUR) (SITREP, ASSESSREP, the weekly reporting, and the received and/or transmitted Fragmentary Orders).

A key feature of ISAF operations is represented by applications for operating outside the responsibility of a Regional Headquarters, made by different units of the ISAF. All these are usually coordinated by CJOC.

Information Management is the most important activity carried out under CJOC, an attribute of CJOC and *Information Management Working Group (IMWG)*, supported by specific communication means. Management is based on the “*pushing and extracting information – PUSH-PULL*”, and “*need to know*” principles and rely on systems such as JCHAT, JCOP, WISE and the Event Log.

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The main challenges for the operations carried out under CJOC and in Afghanistan theatre of operations are: the ability to use terms and procedures of NATO Headquarters in English, operational experience, common sense, a proactive attitude, team effort, national restrictions, national chain versus NATO Command at the level of management and employment, training and mission during the CJOC functioning.

ISAF is expected to continue to exert pressure in South-West Afghanistan. The question is how quickly the area gains can be consolidated and whether the temporary security can be translated into a long-term security environment provided by the Afghan Government and into economic development. Pakistan remains a critical factor in this equation, given that the US cannot wage a war in Afghanistan without Pakistan.

The Strategic objective in Afghanistan is the establishment of the Afghan Security Forces in order to be able to take over from the American Forces the responsibility for their own security, allowing Washington to withdraw troops from the country. The task involves obtaining popular support, as well as isolating and disarming insurgent forces. To achieve it, the US must convince the Afghan people (which in any case do not appear as a single, united entity) that supporting the US objectives is a reasonable option, given that the US objective is to withdraw from this country. First, Afghans must consider the American option as a more attractive option than the one represented by the Taliban. Second, Afghans must be prepared to assume substantial risks and hardships. And third, Afghans must be ready to defeat the Taliban, otherwise they will face serious consequences.

CONCEPTUAL DELIMITATIONS REGARDING SUPPLY CHAIN MANAGEMENT

Colonel Alexandru NEDELUCU
Colonel Virgil ASAN-MIC

Activities within the supply chain transform raw materials and components in a product that is delivered to the consumer or user. Therefore, a logistics chain connects the various value chains within it.

The value analysis usually applies to the entire supply chain. Any operation of the logistics chain should bring value and, as such, one must continually seek to obtain the same value for a lower cost. In reality, very often it is not difficult to determine the costs of each operation in the supply chain, but its added value. Therefore, determining the added value is an important concern, especially because an economy in one of the links of the chain can bring about an increase in another link, which is not necessarily a bad thing.

Keywords: *logistics chain; tactical operations; information technology; logistic support*

Logistics is an evolving field that has known and still knows many changes determined by the economic environment characteristics they are part of. Therefore, we are witnessing the transition of logistics from an operational activity to a tactical and even strategic one. It is in this way that logistics has managed to expand outside an enterprise and the concept of Supply Chain (SC) has been outlined.

Initially, the concept of *Supply Chain* was used in connection with the path from the source (supplier) to the company (within it, where the production takes place). In the context of e-business, the importance of the *Demand Chain*, which covers order processing processes, has been reconsidered. As the two terms are related, they have been integrated into a single concept – *Extended Supply Chain*, and because it affects organisational management, it has been transformed into *Supply Chain Management*¹.

A general definition of the concept of *Supply Chain* for an enterprise includes all suppliers, production capacities, distribution centres,

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¹ D. Fotache, L. Hurbean, *Supply Chain Management: From Linear Interactions to Networked Processes*, in *Revista informatică economică*, no. 4 (40)/2006, p. 73, at www.revistaie.ase.ro/content/40/Fotache.pdf, retrieved on 10.02.2010.

warehouses and customers, together with raw materials, semi-finished products stock and finished products stock, and all resources and pieces of information involved in satisfying customer demands.

Another definition states that a Supply Chain is an economic process that connects suppliers, manufacturers, warehouses, logistics, distributors and end customers and it is a collection of skills and resources aimed at delivering services and products to customers. It includes activities and information flows in both directions and it has associated transformations through which the raw material becomes a finished product.

Often, the Supply Chain is described by means of the revenue and cost, involved in every component: costs with suppliers/raw materials and supplies; transportation, production, storage and distribution costs; revenue from customers.

It is considered that the *Supply Chain Management (SCM)* term was discussed for the first time in 1982, by two consultants in the field, R. Oliver and M. Webber. In the opinion of these two professionals in the management field, the Supply Chain represented an effort of the logistics to become a top management concern, since “... *only top management can assure that conflicting functional objectives along the supply chain are reconciled and balanced*” and that only “... *an integrated systems strategy that reduces the level of business vulnerability is developed and implemented*”².

In this respect, the two appreciated that one of the prerequisites for success was generated by “... *coordinating material, information and financial flows within a large multinational company*” and it “... *is a challenging and rewarding task*”³. Another assessment aimed at creating a Supply Chain in a group of companies, which would act as one, under a single leadership. Given these issues, we believe that, for the '90s, this action would have been extremely difficult to perform.

In another definition, *SCM* is the practice of coordinating the flow of goods, services, information and finance moving from suppliers (raw materials and components) to manufacturers and sellers (direct ones or distributors) and, finally, to customers. This process includes generating and receiving orders, tracking them, effectively and timely delivering goods and services⁴.

The term *Supply Chain Management* has been developed to express the need to integrate key business processes from end user to original suppliers. The basic idea of *SCM* is that companies involve in a logistics chain at least by exchanging information related to market fluctuations and production capacities.

² R. K. Oliver, M. D. Webber, *Supply Chain Management: Logistics Catches up with Strategy*, Logistics, London, 1992, p. 66.

³ *Ibidem*, p. 67.

⁴ I. Roceanu, *Compoziția și gestionarea lanțului de distribuție*, Computerworld Professional, no. 7, 2003, p. 3.

In the light of those presented above, we consider that if all the relevant pieces of information become available to any company in the logistics chain, then it is possible to try chain optimisation rather than sub-optimisation based on the interests of private firms. This leads, according to experts, to a better general production and distribution planning, which can reduce costs and provide a better attractiveness of the final product, providing sales increasing and better overall results for the companies involved.

In its classical sense, the *Supply Chain Management* term includes the coordination and conduct of all activities involved in the Supply Chain to achieve optimal performance. Currently, some analysts name these activities *Supply Network Operations*, in an effort to better reflect the high degree of collaboration between the actors involved in this process.

Supply Chain Management refers primarily to the optimisation and automation of all economic processes that take place at company level, from the supply of raw materials and materials to production processes, transport and distribution of finished products.

Current economic conditions impose short-term goals to companies, such as⁵: reducing stocks, increasing revenue while maintaining constant fixed costs, improving performance.

SCM applications manage, forecast demands, synchronising the supply process with requirements. Matching offer with demand delivers the ordered product at the right time and place.

If the activities specific to supply are carried out when supply orders are received, traders can reduce stocks, improve customer satisfaction and avoid some unpleasant surprises. We believe that, under these circumstances, companies can work with a stock near the critical stock.

Successfully incorporating *SCM* leads to a new type of competition on the global market that is no longer between companies but between logistics chains. This is because companies, no matter how much they may strive to develop competitive advantages through improved customer services and optimised costs, have reached a maximum limit inside and seek out other sources of advantage outside. Manufacturers improve their procurement and production costs mainly due to relocation. In turn, distributors favour outsourcing. This means going beyond the enterprise and being included in a supply chain. It does not mean that all companies are at the same level of development of the supply chain.

⁵ V. Lupșe, O. Cosma, *ERP Extension – Supply Chain Management (SCM)*, in *Revista informatică economică*, no. 2 (38)/2006, p. 120.

SCM ensures improved management of the flows starting from the *supplier's supplier* to the *customer's customer*. Among the component supply chain partners, three categories of flows circulate:

- *physical flows*, which are oriented from upstream to downstream (there are some physical flows oriented upstream, specific for reverse logistics activities);
- *financial flows*, which are directed downstream to upstream;
- *information flows*, running in both directions, preceding, accompanying or following physical and financial flows; from upstream to downstream they are related to physical flows, while in the opposite direction they are related to financial flows.

As such, leading a logistics chain means streamlining flows by optimising costs. Essentially, costs can be grouped into three broad categories, namely: costs of keeping inventories; costs related to the movement of physical flows; costs caused by stopping the physical flows.

Efficient delivery chain management provides the necessary amount of goods and services where and when necessary, in the required quantity and at the best price. In this sense, the Supply Chain is defined⁶ as an *umbrella process* under which products are created and delivered to customers. Chain management enables the management of the enterprise, integrates internal and external processes, provides flexibility and transparency in conducting business from the phase of supplying raw materials needed for production to delivery to final consumer.

From a conceptual point of view, the logistics chain is often represented as in *figure 1*.

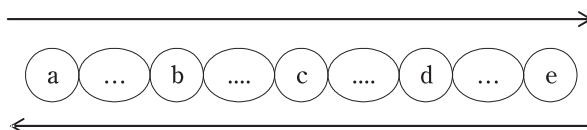


Figure 1: Representation of a Logistics Chain

Activities within the Supply Chain (also called value chains or life cycle processes) transform raw materials and components in a product that is delivered to the consumer or user. Therefore, a logistics chain links the various value chains from inside.

Value analysis is usually applied to the entire Supply Chain. Any operation of the Supply Chain should bring value and, as such, obtaining the same value at a lower cost must continually be sought. In reality, very often, it is not difficult to determine the costs of each operation in the Supply Chain, but its added value.

⁶ G. Meșniță, *Introducere în afaceri electronice*, Editura Junimea, Iași, 2002.

Therefore, determining the added value is an important concern, especially since the economy in a link in the chain can increase the other, which is not necessarily a bad (negative) thing. Based on this principle, we find forms of partnership between producers and distributors, such as *Efficient Consumer Response (ECR)*, which requires close collaboration between all participants in a delivery chain to identify possible improvements as well as who will bear new costs, and who and to what extent will benefit.

The efficient design and operation of a Supply Chain is a component of the planning activity undertaken at both strategic and tactical levels. Strategic planning implies decisions involving the configuration of supply chain network, number, location, capacity, facilities technology etc. Planning at the tactical level of the Supply Chain operations requires decisions on acquisition, processing and products distribution.

The strategic setting of the supply chain is a key factor influencing the effectiveness of tactical operations and, thus, it has a lasting impact on a company. From this point of view, we think that the objective that governs all efforts in a Supply Chain is to increase competitiveness by providing services accepted by customers at a minimal cost. Services improvement can be achieved in two ways:

- development of organisations integration and elimination of unnecessary or expensive activities;
- better coordination of flows.

From this perspective, the Logistics Chain Management has the task of integrating organisational units within it, coordinating the flows necessary to meet customer demand in order to improve the competitiveness of the chain as a whole.

Currently, *SCM* has become a strategic element that is an effective way of creating value for the customer. Consequently, the role of *SCM* and the link between source, intermediaries, producers, buyers and users have become increasingly important.

Logistics chain models. There is a variety of logistics chain models addressed to participants both upstream and downstream. The model called *Supply Chain Operations Reference (SCOR)*, developed by the *Supply Chain Council*, measures the total performance of the Supply Chain. This is a reference model for chain management, built up, as described above, from the supplier's supplier to the customer's customer. It includes delivery performance, production flexibility, costs for the contract provisos or some conflicts, and other factors in evaluating the overall logistics chain efficiency. Each link in the supply chain is an activity or set of activities that we can regroup under one of the four expressions of *SCOR method*:

- *source*: supply, includes all activities associated with this concept, purchasing, establishing references etc.;

- *make*: production, with its different industrial variants: mass production, order production etc.;
- *deliver*: distribution, in all its forms: sales to other businesses, sales to end customers with their different variants;
- *plan*: two cross-links operations that allow the management of relations between the two links.

Each link is connected, except the extremities, to an upstream and a downstream link. The *source* for one becomes *deliver* for the one who supplies and leads to *make* for that (those) who uses (use) the supplied products (*sourced*). For a logistician, the content, procedures and techniques used in a particular link matter less than their leadership and therefore their planning (*plan*) part.

Global Logistics Chain Forum has introduced another model of logistics chain. This framework is built from eight key business processes that are both inter-functional and transversal for the company. Each process is led by a cross-functional team that includes representatives from the fields of logistics, production, acquisition, finance, marketing, research and development activities. Processes within a Supply Chain are: customer relationship management; customer service management; satisfaction of demand, order fulfilment, manufacturing flow management; supplier relationship management; product development and marketing; reverse logistics.

SCM competitiveness can be improved in several ways, by either reducing costs or increasing flexibility, all in compliance with changes occurring in the clients/customers demand or by offering better quality products.

The two pillars represent the two main components of *SCM*, namely, the integration of a range of organisations and information, the coordination of material and financial flows. The figure shows that there are other disciplines that have their foundation in *SCM*.

Building a Supply Chain calls for choosing suitable partners to establish a medium and long-lasting partnership. To become a network of effective and successful organisations, consisting of separate organisations from the legal point of view, an inter-organisational collaboration is required based on new concepts of coordination strategies by aligning partners involved.

Coordination of the activity along the Supply Chain can be facilitated by using the latest developments in information and communication technology. In this way, those processes executed manually in the past can become automated, and the interface of two entities can be simplified.

In the military environment and especially in multinational operations, where there are involved commercial companies that provide logistic support to different functions and areas of responsibility, the role of *SCM* is more visible regarding the goods and services provided by these companies. At NATO level,

mainly at the NATO Maintenance and Supply Agency (NAMSA) and the NATO Maintenance and Supply Organisation (NAMSO), the aspects introduced by the implementation of the *SCM* concept show that the integration of logistics functions with other functions of these organisations and bodies is absolutely required, in an effort to contribute to the success of military operations. In the theatre of operations, NATO logistics, through the activities that are integrated and managed, is important not only within the organisation but also between the firms NAMSA cooperates with (suppliers, distributors, customers). We believe that logistics integration at NATO level, when it comes to military actions conducted in theatres of operations in multinational environment, with member states and countries that are not NATO members, is not sufficient anymore, considering “... *the need for coordination with all partners involved in the flows of materials, components, products and services from suppliers to the final consumer, to which the information flow is added. In this context, an extensive theory has developed based on logistics chain and logistics chain management*”⁷.

Supply Chain Management in the military assures the systemic and strategic coordination of the conventional functions and policies related to these functions within the logistics system of the multinational force and “... *between different companies in the logistics chain, in order to improve long-term performance of the individual companies and the supply chain in general*”⁸. In line with the above-mentioned facts, we believe that the performances of the logistic support management structures within multinational operations depend on the practical arrangements through which they can minimise the degree of influence of the actions of corporate managers that make up the military supply chain on other companies involved in providing goods and services in the theatre of operations, so that the competition started between them at the individual level could occur between logistics chains as well.

In the multinational environment, it is estimated that by streamlining the supply-distribution activity, a part of the total military operation costs can be decreased, compared with what was wanted in the past, meaning reduction of individual activities costs.

In conclusion, the overall objective is for *SCM* to operate most efficiently, namely ideally, without interruption of physical, financial and information flows. To achieve such goal, *SCM* relies on advanced planning systems, developed by using superior software tools.

⁷ L. Ilieş, *Logistica – sursă de competitivitate*, in *Revista de Management & Marketing*, no. 1, 2006, at www.managementmarketing.ro/pdf/articole/8.pdf, p. 98, retrieved on 10.02.2010.

⁸ *Ibidem*, p. 99.

HUNGARIAN PEACEKEEPERS IN AFRICA AND A HUNGARIAN PERSPECTIVE ON THE UN MISSION IN MOZAMBIQUE

Major János BESENYŐ

The significance of the NATO/EU and UN missions in the life of Hungarian Defence Forces is well known. Most of the people know that 1 000 officers, non-commissioned officers and soldiers can serve abroad at the same time. There is a training centre in Szolnok, where applicants can prepare for international service, yet, there still can be noticed some deficiencies as far as training is concerned. Although there is a huge number of experienced people from various missions, there are not enough manuals or pieces of information based on the experience about Africa.

In this article, the author shares some information about the UN mission in Mozambique where 23 Hungarian Army officers and 20 police officers served under the UN flag as peacekeepers. The UN Mission in Mozambique (ONUMOZ) was one of the most successful second generation peacekeeping efforts in the '90s.

Keywords: *Hungarian peacekeepers; ONUMOZ; Africa; Mozambique*



The UN Mission in Mozambique (ONUMOZ)¹ was one of the most successful second-generation peacekeeping efforts in the '90s. Moreover, the ONUMOZ is particularly important to the Hungarian national armed forces since it was here that the greatest number of UN officers, 23 in total, serving under the UN flag, were stationed as military observers². The Republic of Hungary's Police Force also made considerable effort towards resolutions in Mozambique, with 20 Hungarian police officers serving in the bounds of ONUMOZ³.

Until 1975, Mozambique was an African holiday paradise, with at least half a million visitors annually from all over the world. Among the major tourist attractions available, there were national

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¹ *United Nations Operations in Mozambique* or, in Portuguese, *Operação das Nações Unidas em Moçambique, ONUMOZ*.

² <http://daccessdds.un.org/doc/UNDOC/GEN/N94/196/62/PDF/N9419662.pdf?OpenElement>, accessed on 29.07.2009.

³ Dr. Boda József, *A rendvédelmi békefenntartás kialakulása, fejlődése, helye és szerepe a XXI. Században* doktori (PhD) értekezés, ZMNE, Budapest, 2006, p. 25.

parks, sandy beaches, as well as the possibility of snorkelling, sport fishing and hunting. Then, the revolution broke out.

Mozambique⁴

❖ *Geography*

The country lies on an area of 801 590 square kilometres, south of the equator on the eastern side of the African continent. From northeast to southwest, the country spans 2 000 km in length, while in the east-west direction it is 50-600 km wide. The coastline is 2 700 km in length.

❖ *Natural Environment*

The southern portion of the country is characterised by lowlands, while the central region is characterised by the protrusions of the Zimbabwe Mountains. Finally, in the north, there are the highlands of 600-1 000 m in height from which individual mountains emerge.

❖ *Climate*

The country is characterised by a variable moist tropical climate, with a wet season lasting from November to March. The amount of precipitation is high at the coast with a decrease towards the western border, though still high in the mountains.

❖ *Plant and Animal Life*

The northern areas are characterised by tropical rainforests, while the central and southern areas are characterised by savannah plant life. As a result of excessive hunting and for tourist purposes, wildlife reservations have been established, however, these were destroyed in great number during the civil war, with many animal species (giraffes, elephants, rhinoceros) being declared “*endangered*”. Moreover, there is a great number of antelopes, zebras, buffalos, baboons, lions and crocodiles.

❖ *Political System*

Originally given the name “*People’s Republic of Mozambique*”, in 1987, the country was later renamed, in the name of democracy and with the introduction of multiple political parties, the “*Republic of Mozambique*”. Until the 1992 ceasefire, the only legal political party was the Marxist-oriented “*Liberation Front of Mozambique*” (*Frente de Libertação de Moçambique, FRELIMO*) and the *Mozambique National Resistance Movement (Resistencia Nacional Moçambicana, RENAMO)* was the most significant armed opposition party. The country was divided into 10 and, from 1990,

⁴ <http://bora.cmi.no/dspace/bitstream/10202/240/1/WP2000-10.pdf>, retrieved on 29.07.2009 and <http://www.umsl.edu/services/govdocs/wofact92/wf930171.txt>, retrieved on 29.07.2009.

into 11 provinces. According to the new constitution of 1990, the President, who is directly elected by popular vote, is also the armed forces Commander-in-Chief and the one responsible for appointing and changing the Prime Minister. The legislative body is the unicameral Assembly of the Republic and judicature is governed by the supreme court.

❖ *Population*

In 1992, the population was 15 469 150, with an annual growth rate of 4,1%. The population consists of 47% macua, 23% tsonga, 11% sena, as well as numerous other ethnic groups. Less than 1% of the population is white. 16% of the population lives in cities. The proportion of the population under 15 years of age is exceptionally high at 45%. The official language is Portuguese. 60% of the population represents followers of natural religion, 30% are Christian and 10% Muslim. The social welfare and health care systems are exceptionally poor and the rate of illiteracy is 60%.

❖ *Economy*

Mozambique is essentially an agrarian country, with a GDP of 120 USD per capita, of which 50% comes from agriculture, 20% from industry, 20% from commerce and services and 10% from other activities. 4% of the land area is used for agriculture, while 57,5% is used for grazing. In terms of mining, coal mining is noteworthy. The Cabora Bassa hydroelectric power plant (2 000 MW), operating on the Zambezi River, essentially generates energy for South African consumption. The country has 3 288 km of railway lines, 26 498 km of roadways and two airports. Following the 1994 elections, the country has undergone considerable economic changes.

❖ *History*

Around 1000, Mozambique's original inhabitants, the *Khoikhoi*, were forced out by the *Bantu* tribes arriving from the north. At the same time, Arab merchants also appeared establishing settlements along the coastal strip⁵. In the southern region, the Monotapa Empire was established in the 12th century and flourished in the 15-16th centuries. Mozambique was discovered by Vasco da Gama in 1498, and then, in 1505, the Portuguese established a base⁶ and brought the empire under their control until 1626. In 1752, Mozambique was fully colonised by Portugal. In 1951, it was given the status of overseas province and gained independence on 25 June 1975. The political party, *FRELIMO*, was founded in 1962 in order to fight for the liberation of Mozambique from Portuguese colonisation⁷. In April 1974, the dictatorship fell in Mozambique and, in September, a transitional government

⁵ Mary Fitzpatrick, *Mozambique, Lonely Planet*, 2007, p. 21.

⁶ M. D. D. Newitt, *A History of Mozambique*, Indiana University Press, 1995, pp. 15-19.

⁷ Mary Fitzpatrick, *op. cit.*, p. 24.

was formed with Joaquim Albert Chissano as Prime Minister. On 25 June 1975, Mozambique regained its independence under a FRELIMO government headed by Samora Machel, who became President of Mozambique⁸. With the help of the neighbouring country, Rhodesia's (now Zimbabwe) security services, *RENAMO* was founded. In 1976, within the confines of economic sanctions, the Mozambique government closed its shared borders with white-controlled Rhodesia. The white Rhodesian leadership regime collapsed in 1981 and the new state was named Zimbabwe. *RENAMO* accepted South Africa's support and, in 1983, leaders of Mozambique and South Africa began negotiations⁹. In March 1984, the two governments signed the peace pact – *Nkomati Accord*. In August, new *RENAMO* guerrilla attacks were carried out against government control and the government warned South Africa to discontinue rebel support.

In June 1986, Mario da Graca Machunga became Prime Minister. In October, President Samora Machel was killed in a plane crash and, in November, former Minister of Foreign Affairs, Chissano, became President¹⁰. In December, through National Assembly elections, all FRELIMO and government leaders were reelected. In September 1988, Chissano and the South African President, P. W. Botha, established a joint commission on cooperation and development. In 1989, South Africa supported the USA peace initiative; however, both *RENAMO* and FRELIMO rejected it. In April, *RENAMO* called for a general ceasefire, which was not implemented. In June, the government announced a 12-point peace initiative. At the *RENAMO* congress, held in July, the Marxist-Leninist doctrine of FRELIMO was cancelled and the party opened up the membership different groups. In January 1990, presidential elections were held and, in July, the first direct negotiations between FRELIMO and *RENAMO* took place in Rome. In the official statements released following negotiations, both participants expressed their hope for a peaceful conflict resolution. In August, the government changed the country's name from People's Republic to Republic, which meant that multi-party democratic elections would take place the following year (actually held in October 1994). In November, the National Assembly accepted the new constitution and a new FRELIMO-*RENAMO* negotiation took place in ROME. In June and August of 1992, several declarations were signed by both parties. On 4 October, President Chissano and *RENAMO*'s President Afonso Dhlakama signed the *General Peace Agreement (GPA)*, which included the issues of free elections as well as the establishment of new military forces. The peace agreement officially went into effect on 15 October¹¹.

⁸ *Ibidem*, p. 25.

⁹ M. D. D. Newitt, *op. cit.*, pp. 562-565.

¹⁰ *Ibidem*, p. 569.

¹¹ <http://daccessdds.un.org/doc/UNDOC/GEN/N92/490/12/IMG/N9249012.pdf?OpenElement>, retrieved on 29.07.2009.

The UN Operation ONUMOZ

The Marxist government that rose to power in 1975 inherited a country rife with political instability and struggling with economic chaos. Out of fear of the left-wing governed Mozambique, Rhodesia, followed by South Africa, supported the RENAMO uprising. RENAMO's strategy to destabilise the government involved impairing the country's entire area and seizing transportation and communication systems. In response, the government initiated its fight against rebellion, thus bringing about the civil war. According to the peace agreement signed in Rome on 4 October 1992, a ceasefire was implemented and the parties agreed to disarm armed forces. Several commissions supported the agreement, achievement of elections, establishment of political parties and refugee issues. Pursuant to the agreement, the UN participated in monitoring the ceasefire, disarmament, election preparations and transactions as well as supervising the withdrawal of foreign troops¹².

As the civil war intensified, with the approval of the Mozambique government, Malawi and Zimbabwe troops occupied the main transportation roads and secured free passage between Indian Ocean ports and those of Africa's southern regions. On 13 October 1992, in Resolution 783, the Security Advisory Council appointed Aldo Ajello, of Italian origin, as the UN Secretary General's Special Representative (SRSR) and with 25 military observers proceeded to Mozambique to assist in setting up the peacekeeping mission in accordance with the Security Council's Resolution 782. The team arrived in the capital city, Maputo, on 15 December.

The *Mandate of ONUMOZ* expresses the political and military aims of the mission. On 12 December 1992, Resolution 797 of the Security Council gave mandate to ONUMOZ to install its force of 7 500 soldiers, police officers, and civil servants. The tasks of the mission defined in chapter III, paragraph 18 of the Resolution, are listed as follows:

- ceasefire and partition of power, disarmament, supervision and monitoring of the collection and destruction of weapons;
- supervision and monitoring of the full withdrawal of foreign troops;
- supervision and monitoring of the dissolution of non-organised armed forces and securing of necessary infrastructure;
- close cooperation of the UN civil police and local police and provision of support as needed;
- facilitation of the building of confidence;
- further tasks towards refugees, demobilisation of soldiers and armed forces, as well as handling of issues pertaining to groups suffering humanitarian needs and long-term settlement of problems¹³.

¹² *Ibidem*.

¹³ http://www.un.org/Depts/dpko/dpko/co_mission/onumozM.htm, retrieved on 29.07.2009.

The mission was declared on the basis of the paragraph VI of the UN constitution. On 5 November 1993, Security Council Resolution 882 extended the mission's mandate for an additional six-month period and commanded to Mozambique 128 police observers, whose number was then increased to 1 144 on the basis of Security Council Resolution 898.

On 5 May 1994, Security Council Resolution 916 ordained the establishment of the new *Mozambican Defence Force (FADM)* and the mandate was extended by an additional 6-month period until 15 November.

The first ONUMOZ peacekeeping force (Italian), along the Beira Corridor (between Zimbabwe and the Indian Ocean port city Beira), started its service in April 1993, after a six-month delay. In May, the number of peacekeepers reached the amount delineated in the Security Council Resolution.

❖ *Mission Conformation*

Aldo Ajello was the leader of the mission and three organisations were its subordinates: *Military Forces*; *Elections Department*; and *United Nations Office for the Humanitarian Assistance Coordination (UNOHOC)*.

The commander of the military forces was Major General Lelio Goncalves da Silva (Brasil) and his deputy was Brigadier General A. T. Scheffers. Military forces were stationed in three sectors (north, south, and central). The elections department was also stationed in three sectors and 10 provinces.

UNOHOC, under the leadership of Bernt Barnauder, attended to the coordination of humanitarian efforts of non-governmental organisations (NGO) and volunteer organisations (PVO, also called NGO) in three sectors and 10 provinces.

Other UN organisations acting in the country included: UN Development Program (UNDP), UN refugee agency (UNHCR), World Food Programme (WFP), Food and Agriculture Organisation (FAO), UN Children's Fund (UNICEF), World Health Organisation (WHO) and UN Educational, Scientific and Cultural Organisation (UNESCO).

In accordance with the peace pact, ONUMOZ also maintained contact with variously defined committees (UN-RENAMO-FRELIMO): supervisory and observational, ceasefire monitoring, integration committees or for establishing new military, police, information, election and public administration.

❖ *Participating Forces*¹⁴

- *Military forces*: 354 military observers, 6 625 armed peacekeepers (rifle battalions, 1 engineer battalion, logistics company, combat support company,

¹⁴ Richard Synge, *Mozambique: UN Peacekeeping in Action, 1992-94*, US Institute of Peace Press, 1997, p. 192.

motion detecting company, health and aircraft units). Soldiers and police from 35 countries took part in ONUMOZ.

- *Civil body*: 355 international, 506 local staff.
- *Police force*: 1 144 civil police¹⁵.
- *Elections department*: 2 100 persons, among whom 278 diplomats and 200 persons from the European Union¹⁶.

Evaluation of the Mission

The activities of ONUMOZ contributed, to a great extent, to the success of the General Peace Agreement in 1992. In the interest of adhering to the agreement, peacekeepers performed patrolling, security, monitoring, demobilisation and election supervisory tasks in the mission area.

❖ *Results*

By 1994, the political situation stabilised, national reconciliation and the normalisation of everyday life began. In order to prepare for the first multi-party elections, 81% of the voting public (7,9 million) was registered. The elections took place on 27-28 October 1994, with the participation of 18 parties. The fair and democratic elections were won by FRELIMO. At the presidential elections, Chissano and Dhlakama obtained 53,3% and 33,7% of the votes, respectively. The results of the representatives' elections saw the 250 parliamentary seats divided between three parties (FRELIMO – 129, RENAMO – 109, Unicio Democratica – 12). An extraordinarily high percentage of voters (87,9%)¹⁷ participated in the elections. The ONUMOZ information programme provided the locals with an understanding of the aims and activities of the UN. Both parties respected the ceasefire. ONUMOZ disarmed 75 000 government and RENAMO soldiers and collected 111 532 weapons from the two parties, as well as additional 43 491 weapons from various paramilitary organisations. The new army of 30 000 was successfully set up and trained (in a 50-50 ratio of the former enemy's soldiers), ONUMOZ effectively secured and supervised the main traffic routes. The opposing parties secured free passage for UN staff. Finally, the resettlement of 1,4 million refugees and 3 million deportees was achieved.

¹⁵ <http://daccessdds.un.org/doc/UNDOC/GEN/N94/044/41/PDF/N9404441.pdf?OpenElement>, retrieved on 29.07.2009.

¹⁶ <http://daccessdds.un.org/doc/UNDOC/GEN/N94/411/21/PDF/N9441121.pdf?OpenElement>, retrieved on 29. 07.2009.

¹⁷ http://www.un.org/Depts/dpko/dpko/co_mission/onumozFT.htm, retrieved on 29.07.2009.

❖ *Unfulfilled Objectives*

Following the elections, armed gangs remained throughout the country.

Trade, in and outflow of weapons, ammunition and explosives were also not successfully stopped.

Due to occasional problems in coordination between opposing parties and ONUMOZ, armoury of some of the military and police bases were not registered.

Of the UN staff, 23 soldiers, 2 police officers and 1 civil servant lost their lives¹⁸.

In December 1994, UN soldiers, police, and civil participants left the country. At the end of January the following year, the mission was permanently closed down.

The UN considers ONUMOZ one of its most successful missions, playing an important role in achieving democracy and stabilisation in Mozambique¹⁹. ONUMOZ successfully achieved the mandate by disarming and integrating soldiers into society and by establishing and training the new military and police forces. ONUMOZ prepared and provided support for free elections, coordinated humanitarian support, resettled refugees and deportees²⁰. Various national organisations continue their rebuilding, restoration and demining activities.

Mozambique Following the First Free Elections

The government is extraordinarily popular in the more densely populated areas in the southern region of the country and in the capital city. Unlike other African examples, the 1992 Peace Agreement brought about peace to Mozambique. Following the 1994 elections, RENAMO assumed the role of parliamentary opposition and did not return to the use of weapons (as UNITA did in Angola on several occasions). President Chissano contributed significantly to the consolidation of the political system, taking several measures to appease RENAMO. He irrevocably abandoned the persecution of traditional tribal religions and folk healers, as well as forced the issue of collectivism. Although foreigners cannot actually own land, there is nonetheless a significant number of “*perpetual*” land rental contracts with South African farmers. Of the country's population, 70% is unemployed, and 50% of the adult population is still illiterate. Infant mortality is extraordinarily high (13,4%) and at least half a million landmines have not yet been gathered up.

Not too long ago, Mozambique was the world's second poorest country. By 2000, however, according to the World Bank, it has become one of Africa's economic “*examples*”. The economy has also achieved significant results in the area

¹⁸ http://www.un.org/Depts/dpko/dpko/co_mission/onumozF.html, retrieved on 29.07.2009.

¹⁹ Richard Synge, *op. cit.*, p. 149.

²⁰ <http://daccessdds.un.org/doc/UNDOC/GEN/N94/515/76/PDF/N9451576.pdf?OpenElement>, retrieved on 29.07.2009.

of inflation reduction with a decrease from 70% in 1994 to 2,5% in 1998. In 1997, GDP growth was 12,4%, while the following two years it was 10%, thus Mozambique becoming one of the fastest developing economies²¹. The establishment of a market economy, as well as the attainment of political stability since 1995 has inspired investor confidence. Within the scope of significant investment, the aluminium processing industry has developed. Furthermore, numerous investors have come forward for the purpose of tapping natural resources such as titanium, coal and natural gas.

Privatisation of state companies has also been achieved. A significant boom in tourism has been observed in areas where holiday resorts and wild animal reservations have been built up. One of the influences in the economic growth is that the ports of the Indian Ocean are indispensable to the industrial centre of the South African Republic, Gateng. The World Bank has provided further alleviation by dismissing a significant part of the country's debt²².

Unfortunately, flooding of Rivers Save (Sabi) and Limpopo at the beginning of 2000 brought great destruction to the country. The evaluation of the damages caused is currently in progress. It can be safely said that the fulfilment of the African "economic wonder" has unfortunately been delayed.

The UN mission in Mozambique proves that the world organisation is prepared and capable of bringing about stable and reassuring crisis resolution. However, it is also apparent that peace, security and development cannot be achieved through the influence of external force without the cooperation and will of opposing parties and the citizens.

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²¹ <http://www.iss.co.za/Af/profiles/Mozambique/Economy.html> retrieved on 29.07.2009.

²² <http://siteresources.worldbank.org/INTMOZAMBIQUE/Resources/WB20anos.pdf> retrieved on 29.07.2009.

NATO AND ENERGY SECURITY

Michael RÜHLE

The author points out the reasons for NATO's interest in energy security, showing that assuring energy supply may not be a straightforward military challenge, but it clearly has a security dimension.

First, he mentions some of the reasons for which NATO allies approach energy security with considerable hesitation. Then, he writes about the fact that the Alliance has managed over the years to develop an agreed "acquis" on energy security, tailored to NATO's specific capabilities and resting on three main pillars: dialogue and sharing of information and intelligence among allies, projecting stability and critical energy infrastructure protection.

In the end of the article, he highlights the need for a more systematic approach in order for NATO to better focus its energy security activities, noting that the Alliance must develop a culture of political discussion which is not confined to issues that may involve it militarily, but which also includes issues of broader political relevance.

Keywords: *energy security; energy policy; new security challenges; sustained dialogue; critical infrastructure protection*

Over the past years, energy security has turned into a major theme of the international security debate. Several developments account for this: Europe's growing dependency on oil and gas; the growing energy needs of rising powers such as China and India; the depletion of fossil fuels expected to set in after the middle of this century; an intensifying debate on climate change; and a renewed interest of many nations in civilian nuclear energy.

Additional factors include armed threats to energy supplies, be they through terrorist attacks or piracy, and the political instability in many energy-producing states – including attempts by some of these states to (ab)use energy supplies as a political weapon.

NATO has a legitimate role to play in energy security. But what should this role look like?

All these developments point in the same direction: assuring energy supply may not be a straightforward military challenge, yet it clearly has a security dimension. As an Alliance that provides

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protection for almost 900 million citizens and that features a unique network of partner countries, NATO has a legitimate role to play in energy security. But what should this role look like?



NATO's new *Strategic Concept* provides a clear-cut answer to this question. Marking a noticeable shift from the protection of territory to the protection of people, the document does not only offer a vivid description of the growing vulnerability of allied energy supplies, but also tasks NATO to *“develop the capacity to contribute to energy security, including protection of critical infrastructure and transit areas and lines, cooperation with partners, and consultations among allies on the basis of strategic assessments and contingency planning”*.

However, translating this ambitious prescription into a concrete NATO agenda will not be easy. For a number of reasons, NATO allies are approaching energy security with considerable hesitation.



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One major reason for this caution is diverging national interests. As energy security is largely considered to be a national economic issue, many nations are not keen to discuss this subject in multinational fora. This is a challenge not only for NATO but also for the EU. Despite the European Commission's efforts at drafting a forward-looking energy policy, member states continue to make individual deals with energy suppliers. In short, when it comes to energy security, nations tend to look after themselves.

Another reason for NATO's cautious approach to energy security is the fact that the subject is inextricably linked with Russia. Russia owns the world's largest reserves in coal, gas and uranium, and ranks no. 7 in global oil reserves. It thus holds a key position in Europe's energy supply. Given that allied views on Russia's foreign, security and energy policies have sometimes differed – owing, in part, to different degrees of energy dependency on Russia – there remains a hesitation to engage in a debate that might degenerate into a fruitless discussion on Russia.

A third reason for NATO's caution is the fact that energy security is already being dealt with by a considerable number of actors, ranging from the EU

to the International Energy Agency, and from the OECD to the private sector. A NATO role can therefore only be a complementary one – adding value rather than leading the process.

A final reason for NATO's hesitation lies in its character as an Alliance predominantly identified with military means. While it is obvious that energy security can have a military dimension – as is demonstrated by NATO's current anti-piracy operations off the coast of Somalia, which also help protect oil tankers – many allies remain concerned that a too visible NATO role might unduly “militarise” what was essentially an economic subject.

NATO has managed over the past years to develop an agreed “acquis” on energy security which is tailored to NATO’s specific capabilities

Thus far, this combination of diverging political and economic interests on the one hand and NATO's structural limitations on the other has hampered a systematic discussion on energy security among allies. Despite these constraints, however, NATO has managed over the past years to develop an agreed “acquis” on energy security which is tailored to NATO's specific capabilities. This “acquis” rests on three main pillars.

First, dialogue and sharing of information and intelligence among allies, with partner countries and the private sector. The major focus is on the security of critical energy infrastructure, particularly in energy producing and transit countries; the security of transport routes; and analyses of terrorist threats. Another aspect is the analysis of the secure supply of energy, i.e. fuel, for NATO forces in operations.

Second, projecting stability. This means first and foremost shaping the reform processes in NATO's broader strategic environment. The emphasis is on political dialogue and military cooperation with partner countries in Europe, the Caucasus, Central Asia, the Middle East and the Gulf region. This group comprises energy producers, transit countries and consumers. Consequently, energy security features in many individual cooperation programmes.

Third, critical energy infrastructure protection. In principle, this is a national responsibility. However, at a nation's request, NATO can contribute to the surveillance of sea lanes and territorial waters, either through civilian experts or military means. Moreover, NATO's civil emergency planning capabilities can be employed in case of a man-made disaster, like an oil spill.

This brief list underlines that energy security links into many areas of NATO's agenda, yet these individual activities hardly add up to a coherent policy. If NATO wants to better focus its energy security activities, and coordinate them seamlessly

with other major actors, it needs a more systematic approach. This approach should be guided by the aim of making energy security more visible within the Alliance, and facilitate an enlightened discussion among NATO members.

It is evident that this objective can only be reached by way of a gradual approach. Only if all allies become convinced that NATO offers tangible added value will they come along.

The first step of such a gradual approach must be to de-mystify energy security and make it a regular discussion item in NATO's internal consultations. The opportunity for progress has never been better. As the international security debate is increasingly focusing on new challenges, notably cyber attacks and nuclear proliferation, the pressure on NATO to play its part in meeting these challenges is increasing as well. Moreover, many new security challenges have an energy dimension. The "Stuxnet" cyber attack against Iran's controversial nuclear programme, including the Bushehr power plant, provides a vivid demonstration of the nexus between cyber threats and energy supplies. In a similar vein, the terrorist attacks against power plants in Russia and refineries in African and Arab countries reveal the nexus between terrorism and energy.



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Together with the expansion of NATO's in-house analytical capacity and improved intelligence-sharing among allies, the new security challenges – including energy security – are now mirrored within NATO's organisational structure

The holistic view of new threats in the *new Strategic Concept* is an important first step to making energy security a legitimate Alliance subject. An equally important second step is to give energy security a distinct organisational "home". The creation of the "Emerging Security Challenges Division" in NATO's International Staff provides just that. Drawing together the new security challenges (cyber, terrorism, proliferation, energy) into one division will not only allow for more systematic analysis, but also facilitate a more focused debate among allies. Together with the expansion of NATO's in-house analytical capacity and improved intelligence-sharing among allies, the new security challenges – including energy security – are now mirrored within NATO's organisational structure.



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The third step towards a more systematic NATO approach to energy security consists of a sustained dialogue with other organisations such as the EU, the International Energy Agency, the OSCE and the Energy Charter. While all allies agree that NATO's role in energy security must be complementary to other relevant actors, true complementarity can only emerge if all actors know one another and thus avoid wasteful duplication.

In addition, NATO must also expand the dialogue with the private energy sector that it initiated some years ago, in order to better understand the perspectives and requirements of the energy companies. The main focus of this dialogue with other institutions and the private sector will be the protection of critical energy infrastructure – an area where NATO possesses undisputed competence, and where many partner countries are seeking closer cooperation with NATO.

Another step to anchor energy security more systematically in NATO is the fusion of this subject with military-operational questions as well as with environmental and wider resources issues. At the military level, a debate about more efficient fuels has already set in, since such fuels promise a smaller logistic *“footprint”* in military operations. In addition, some of NATO's operations, such as its anti-piracy Operation *Ocean Shield*, can help in ensuring key fuel shipping routes remain clear. Moreover, it is widely agreed that climate change can have consequences that could also affect NATO, for example humanitarian disasters.

Finally, the new debate about *“rare earths”* – which are of critical importance for modern industrial societies, in particular energy-saving technologies – is a stark reminder that energy security must not be understood solely as the unhindered supply of oil and gas. For an Alliance that considers itself a modern security institution, analysing the interconnectedness of these developments and discussing their security implications should no longer be the exception, but the rule.

A stronger, more coherent NATO role in energy security will not emerge by itself. It must be part of a broader effort to enhance NATO's role as a consultative mechanism beyond immediate military-operational concerns

None of the steps described here will turn NATO into a premier energy security institution. Given the different views of allies, it would be a major success

if they were to agree to make energy security a natural part of their discussions, just as cyber defence and preventing proliferation have become regular items of NATO's political agenda. Such an institutionalised dialogue among allies is the precondition for considering further steps, such as, for example, discussions between the North Atlantic Council with individual partner countries or groups of partners (the so-called "28+n" formula) on energy security, or the setting up of training and defence reform teams for the protection of critical infrastructure.

A stronger, more coherent NATO role in energy security will not emerge by itself. It must be part of a broader effort to enhance NATO's role as a consultative mechanism beyond narrow, traditional military-operational concerns. NATO must develop a culture of political discussion which is not confined to issues that may involve NATO militarily, but which also includes issues of broader political relevance. As long as every debate in NATO is suspected to serve only the preparation of military operations, an enlightened, forward-looking debate about emerging 21st century challenges will remain elusive. Only if allies (re)discover NATO as a political consultation forum will they be able to treat energy security as a legitimate element in a comprehensive approach to security.



A FORGOTTEN GENDARME

Army Corps General (r.)

Constantin (Piki) Z. Vasiliu (I)

Lieutenant Colonel Ion LĂCĂTUȘ

After many years in which the institution of the Romanian Gendarmerie was condemned by the communist regime, since the Revolution of December 1989, it has made its way towards its normal traditions.

It is in this context that one may place the attempt to rehabilitate General Constantin (Piki) Z. Vasiliu, commander of the Romanian Gendarmerie between 1940 and 1944. Unfortunately, very little has been written about him.

In the present article, we intend to reveal his personality and career as well as his role as Head of the Gendarmerie and Secretary of State at the Ministry of Interior, in a turbulent and difficult period for the Romanian nation, as it was the one between 1940 and 1944.

Keywords: *Romanian Gendarmerie; Inspectorate of the Gendarmerie; gendarme corps; general inspectorate; career personality; arrest; execution; elections*

Between September 1940 and August 1944, at the head of the General Inspectorate of Gendarmerie was *General Constantin Z. Vasiliu*. As a subordinate, colleague and friend, General Vasiliu stood by the side of Marshal Ion Antonescu in his government, in detention, during the trial, sentencing and imprisonment, and at the execution pole.

In a time when Romania was under the rule of Marshal Antonescu, the *Gendarmerie* was an element of stability, because of both the professionalism of those who were part of it and the stable management. In these four years (September 1940-August 1944), the Gendarmerie was headed¹ by Generals Constantin Z. Vasiliu – commander, Ioan R. Topor – assistant, Constantin Tobescu, chief of Public Safety and Order of the General Inspectorate of the Gendarmerie as well as deputy of Vasiliu, and Constantin Anton – chief of Staff. The first one was together with Marshal Antonescu up to the execution pole and even beyond, the next two died in prison,

Lieutenant Colonel Ion Lăcătuș – Gendarmerie Vrancea County Inspectorate.

¹Tudor Stomff, Alexandru-Alin Spănu, *Constantin Tobescu (1893-1951)*, in “Arhivele Totalitarismului”, no. 36-37, 3-4/2002, București, 2002, pp. 270-274.



and the last one, by betraying, took command of the Gendarmerie, his former plot comrades also throwing him in prison eventually².

This year, in May, we mark 129 years since his birth (16 May 1882), and, in June, 65 years since his death (1 June 1946).

Life and Career

Constantin Z. Vasiliu was born on 16 May 1882 in Focșani, Putna County, the son of Zamfir and Elena Vasiliu, being the third child after Niculaie (born on 8 December 1879) and Maria (born on 8 February 1881). Two sisters followed: Elena (born on 30 November 1883) and Lucreția (born on 8 February 1887).

His father, a career officer, Zamfir Vasiliu (born in 1849), attended military school (1861-1863), then pursued a successful military career, whose high point was, of course, the participation in the War of Independence (1877-1878) with the 7th Line Regiment (infantry). For his deeds of courage and devotion committed on 4, 10, 15, 20 and 27 May 1877, the bombings in Islaz, Bechet and Corabia, he was decorated with “*The Military Gold Medal*” (Royal Decree no. 1377/1877). During his military career, Zamfir Vasiliu also became a Knight of the Order of the “*Star of Romania*”, the 5th class (Royal Decree no. A 533/21 March 1878), “*St. Stanislas Cross*” 3rd class, “*The Crossing of the Danube Cross*”, “*The Defenders of the Independence*” and the “*Russian Commemorative Cross*”. On 10 May 1906, by Royal Decree no. 1876, Zamfir Vasiliu was promoted to Brigadier General (r).

The attraction of the military coat worn by his father would determine young Constantin, after graduating from the high school in Focșani, to choose a military career, being admitted to the School of Infantry and Cavalry Officers, in 1901. He graduated from military school in 1903, being assigned to the 6th Roșiori Regiment. During 1904-1906, he attended the Special Cavalry School in Târgoviște, future Marshal Ion Antonescu being his colleague. After graduating, he moved at his request to the 1st Roșiori Regiment, where Second Lieutenant Ion Antonescu was also assigned. He remained to this regiment until 1908, when, after a riding accident while participating in manoeuvres with the unit, he fractured his spine and was forced to leave the cavalry branch. At the proposal of the Minister of War, General (future Marshal) Alexandru Averescu, who had been his commander

² *Ibid.*

in the 1st Roșiori Brigade³ and who knew him very well – Vasiliu was sent to the Gendarmerie, being appointed the Commander of the Gendarmerie Company Covurlui “attached” to 1st Roșiori Regiment.

From 20 June to 31 August 1913, he participated in the Second Balkan War, as the Praetor of the 1st Cavalry Division. From 16 October 1916, he commanded the Dolj Gendarmerie Company, the largest in the country at that time, with which he took part in the theatre missions in World War I. In this way, he distinguished himself during the withdrawal operations over the River Olt, where the top division⁴ he commanded attacked the enemy avant-gardes, thus saving the 1st Army Corps troops from being captured. The Dolj Gendarmerie Company was “quartered” at Tecuci, and Captain Vasiliu was appointed Praetor in the Communications Area no. 9 and then at Bârlad.

On 1 February 1917, he was appointed Commander of the Iași Gendarmerie Company, “where a strong and competent commander was needed”⁵ and “where the requirements being very high and especially because he had to supply the town of Iași, an energetic, discreet and tactful officer was required, qualities possessed by Captain Vasiliu”⁶. A confidential report, dated 22 September 1917, of the High Praetor, Colonel Sterea, recommended his promotion to the rank of Major, considering him, among others, “eminent officer in all circumstances”⁷, and the resolution of the General Inspectorate of the Rural Gendarmerie considered him as “an excellent officer in every respect”⁸. Therefore, he will be promoted for exceptional results starting 1 September 1917.

In the period between 1 January and 30 June 1918, he was High Praetor of the 6th Infantry Division, where he proved himself to be active and capable during the tasks received. Since 1 September 1918, Major Constantin Z. Vasiliu commanded the 1st Battalion of the 2nd Gendarme Regiment. In his assessment sheet, the 2nd Gendarmerie Regiment Commander described him as “an excellent officer of gendarmes, who must climb up to the highest ranks of the military hierarchy”⁹, recommending him to be promoted to the rank of Lieutenant Colonel for exceptional

³ The 6th Roșiori Regiment was under the subordination of 1st Roșiori Brigade.

⁴ Olt Gendarmes Company.

⁵ Apud general de corp de armată dr. Tudor Cearapin, general de divizie dr. George Seritan, colonel (r.) dr. Octavian Burcin, colonel dr. Țuțu Pișleag, colonel Daniel Georgescu, *Istoria Jandarmeriei Române*, Editura Bren, București, 2004, p. 228.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ *Ibid.*, p. 229.

⁹ *Ibid.*

results. There were also other hierarchical superiors that agreed with his promotion: 1st Gendarme Brigade Commander, General Condreescu and General Ștefănescu¹⁰, commander of the Corps of Gendarmes.

Between 1 April 1919 and 1 November 1920, Major Vasiliu commanded the Independent Battalion of Gendarmerie, Bucovina. Due to the organisation, management and administration of this military and public policy structure in rural areas, the “*gendarmerie in Bucovina can be considered clearly better than the one in the other reunited provinces*”¹¹, and General Ștefănescu, Commander of the Corps of Gendarmes, recommended him again to be promoted for exceptional results, starting 1 September 1919.

New Lieutenant Colonel Constantin Z. Vasiliu was appointed, on 1 November 1920, a Gendarmerie Regiment Commander’s assistant, until 1 April 1921. After it, Vasiliu became a director in the Undersecretariat of State for Restoration and Supply, being recommended once more by all his hierarchical leaders to be exceptionally promoted to the rank of Colonel. In the same year, 1921, he held the position of Commander of the Gendarmerie Training Battalion, being recommended again for promotion. In 1922, Lieutenant Colonel Vasiliu was at the 9th Gendarme Regiment and, on 20 October 1922, he was named interim Commander of the 11th Gendarmerie Regiment, where he would be recommended again for promotion.

On 1 December 1923, Lieutenant Colonel Vasiliu was promoted Colonel. In the same year, the Gendarmerie Corps Commander, General Ștefănescu, speaking about Vasiliu, emphasised that he “*will correspond in the same way to the rank of General for which he is prepared in the most exceptional way*”¹².

Colonel Vasiliu distinguished himself in the pursuit and destruction of the gangs of Bulgarian Komitadgi from Southern Dobrogea, through establishing and organising the Gendarmerie Training Battalion at Cernavodă (1923-1924). Through his work, he turned the units of the 1st Gendarme Regiment into model structures for the entire Gendarmerie (1925), in this respect, obtaining with the Gendarmerie Training Battalion Cernavodă the first place among the entire Gendarmerie Corps (1926).

In 1926, General Popovici, Inspector of the Army, recommended him “*to pass the planned test*”¹³ in order to be promoted to the rank of General.

¹⁰ General Ștefan Ștefănescu led the Gendarme Corps between 08.01.1919 and 04.08.1920 and between 18.03.1922 and 23.11.1927.

¹¹ Apud general de corp de armată dr. Tudor Cearapin et al, *op. cit.*, p. 229.

¹² *Ibid.*

¹³ *Ibid.*

In 1928, he was made in charge of conducting the work in the Drăgășani garrison¹⁴, managing to meet the requirements of the job exemplarily. For the same reasons, General Stavăr¹⁵, Commander of the Gendarmes Corps, proposed him, in 1929, for being admitted to take the headquarters trip¹⁶.

Between 1930-1932, the evaluations of Colonel Vasiliu are entirely laudatory, being proposed by all his hierarchical commanders to take the headquarters trip. Only in 1933 did he take that “*journey*”, being the only Gendarmerie Colonel¹⁷ to successfully pass it. As a result, his hierarchical commanders recommended him to General Constantin N. Dimitrescu¹⁸, General Inspector of the General Inspectorate of the Gendarmerie¹⁹, in order to promote him in rank. In addition, from 3 to 28 July 1933, Colonel Vasiliu participated in a “*Preparatory Course for Senior Officers*”, where he was named as technical advisor in the Directorate for Gendarmerie Affairs.

Paradoxically, in the next period, 1934-1937, Colonel Vasiliu would be considered by General Barbu Pârâianu²⁰, the GIG General Inspector, as an abusive element, who lacked sincerity, was poorly trained, undisciplined etc. Interestingly, in 1934, General Pârâianu scored him as “*unsatisfactory*”, but assistant General Condreescu, General Inspector of the Army, not only disagreed, but recommended him to be promoted to the rank of General.

¹⁴ The future Gendarmes Non-Commissioned Officers School in Drăgășani.

¹⁵ He commanded the Gendarmes Corps between 07.11.1929 and 01.04.1930.

¹⁶ Without taking the headquarters trip, it was not possible for someone to be promoted General.

¹⁷ One may notice the exigency of that time.

¹⁸ He was General Inspector of the General Inspectorate of the Gendarmerie between 12.05.1931 and 15.02.1934.

¹⁹ In accordance with the *Law on the organisation and functioning of the Gendarmerie on 24 March 1929*, the *Rural Gendarmerie Statute on 20 July 1929* and the *Regulation of the law and statute*, the institution of Rural Gendarmerie was “*a militarily organised body established to ensure safety in rural villages, to maintain public order and to enforce laws and regulations under its jurisdiction*”. This law placed the Gendarmerie under the direct subordination of the Ministry of Interior, being authorised to perform ordinary and extraordinary attributions at the authorities’ disposal, practically having general police tasks (art. 2). Gendarmerie was thus, after 21 years, back to the Ministry of Interior. As soldiers, gendarmes are subject to the regulations of the Ministry of War. In addition, Law on organisation and functioning of the Gendarmerie on 24 March 1929 renamed the “*Gendarme Corps*”, which became “*General Inspectorate of the Gendarmerie*” (GIG). General Inspectorate of the Gendarmerie headquarters was on 51 Ștefan cel Mare Avenue, in Bucharest (the former headquarters of the General Inspectorate of the Police, after 1990). From an organisational perspective, the law changed entirely the organisation of the Gendarmerie, redefining it in another way. The gendarmerie brigades were abolished and gendarmes inspectorates were established. Also, regiments were eliminated and gendarmes companies became gendarme legions. Under the subordination of each gendarmes legion, which had as an area of responsibility the territory of a county, there were included the gendarmes departments and posts in the rural areas. Preparation of gendarmes recruits took place in battalions of gendarmes, under the name of “*training centres*”.

²⁰ He was General Inspector of the General Inspectorate of the Gendarmerie between 15.02.1934 and 16.01.1938.

In 1935, when Colonel Vasiliu held the position of professional advisor of regional inspectorates and local training centres in the Romanian Gendarmerie, he was placed five days in arrest by General Pârâianu starting 21 February 1935, for obvious “*inaction in service*”²¹ and other five days of detention on 24 February 1935 for “*lack of inspection routes and dishonesty in the records*”²². Again, this way of punishing Vasiliu is very curious as, at the Royal Manoeuvres that took place the same year, when he was the Head of the Praetorian Service, Generals Manu and Mihăiescu evaluated him with the rating “*laudatory*”.

From 2 June 1936 to 1 April 1937, Colonel Vasiliu led the Gendarmerie Inspectorate in Timișoara, and was then assigned as Senior Control Officer in Craiova, and on 1 November 1937 he retired.

Throughout his work, Colonel Vasiliu was awarded the Jubilee Medal “*Carol I*” (1906), *Bravery and Faith*, 1st class (1912), *Country’s Advance* (1913), *Crown of Romania*, 5th class (1912), “*Medical Merit*” Cross 2nd class (1914), *Romanian Crown with Spades* 4th class (1918), *Commemorative Cross of the War (1916-1918)*, the *Honorary Mark* for 25 years of military service (1924) and *Romania’s Star* 4th class in the rank of officer (1929).

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In the second part of the article, the author will continue to present the biography of Constantin Z. Vasiliu, underlining his activity as General Inspector of the Romanian Gendarmerie.

²¹ Apud general de corp de armată dr. Tudor Cearapin et al, *op. cit.*, p. 230.

²² *Ibid.*

Résumés

Communication et communications dans l'ère de l'information

Du télégraphe de Morse et le téléphone de Bell n'était seulement une étape à la radio de Marconi et voici nous sommes au présent dans l'ère d'Internet, dans la mesure où, par une simple pression sur un bouton, nous transportons, à une partie sur une autre de la planète, des mégaoctets et giga-octets de données, qui sont une partie du patrimoine scientifique, culturel, économique ou d'autre nature de l'humanité. Les transmissionnistes d'antan, des magiciens des commutateurs et du manipulateur, pour lesquels le signal et les ondes électromagnétiques avaient des dimensions concrètes et la caractéristique de directivité n'était pas une notion abstraite, ils ont été rapidement repliés sur les nouvelles coordonnées technologiques.

La guerre continue – la confrontation économique et financière (IV)

La confrontation économique est très complexe et elle englobe des théories, concepts, procédures, fonctions et normes. La plus importante part de confrontation économique traite l'organisation et le fonctionnement des concepts relatifs à la voie des entreprises et le marché. Bien que la mondialisation est un processus bénéfique pour l'humanité, elle est accompagnée de quelques effets comme la pollution, l'immigration illégale, la fuite des cerveaux, la facilitation des clandestins, le trafic d'armes, de personnes, de drogues. Les sociétés transnationales à plusieurs reprises

ignorent les normes et les règles concernant des précautions de sécurité, la protection d'écosystèmes et le maintien des programmes sociaux des pays sous-développés.

Armée de l'Air – fournisseur de sécurité dans le contexte actuel de sécurité en changement et, implicitement, de la guerre non conventionnelle

L'auteur aborde la question de l'Armée de l'Air en tant que fournisseur de sécurité dans le contexte de l'environnement de sécurité et de la guerre irrégulière. Il présente les caractéristiques de l'Armée de l'Air dans les trois niveaux d'implication de l'activité aérienne: opérations de haute intensité, le contrôle de l'espace aérien et des actions spécifiques de la puissance aérienne dans les opérations jointes. Puis, il écrit sur la nécessité de transformer l'Armée de l'Air afin de répondre aux exigences de sécurité actuelles qui, dans ses efforts pour renforcer les capacités de répondre aux nouvelles menaces en Roumanie, en tant que membre de l'OTAN et de l'UE, devront réaliser une reconfiguration de sa puissance aérienne afin d'effectuer de nouveaux types de missions.

La stratégie de développement des capacités CIS/C4ISR dans l'Armée Roumaine pour l'année 2020

Les progrès techniques, technologiques et conceptuels au sein du domaine IT&C ont déterminé des changements importants dans la structure géostratégique, y compris

dans tous les aspects militaires. Cet article présente la nécessité d'un Concept stratégique CIS/C4ISR pour les Forces armées roumaines de l'année 2020, les buts et les objectifs de cette période. À la base de ce Concept stratégique il y a: Network Enabled Capabilities (NEC); NATO Network Enabled Capabilities (NNEC); de nouvelles forces armées C2. On assiste aussi à la complexité de la mission militaire aux niveaux stratégique, opérationnel et tactique, et les opérations seront un mélange des objectifs civils et militaires et elles seront effectuées par des coalitions de la volonté.

Politiques et stratégies propres pour les télécommunications dans l'Union européenne

Les abonnés à la téléphonie fixe sont capables de garder leur numéro de téléphone lors de la commutation d'un opérateur à un autre, même s'ils restent au même endroit. La portabilité des numéros dits non géographiques doit être possible de changer l'opérateur, comme dans le cas de changement d'adresse. L'auteur souligne que la portabilité du numéro est disponible pour tous les abonnés des services mobiles. Un nom de domaine est généralement dans une gamme de niveaux primaire et secondaire dans certains domaines. Le schéma de fonctionnement de l'Internet consiste dans la séparation des noms et adresses. Les noms de domaine sont généralement permanents, et un hôte, y compris les services associés, va garder le même nom, même si elles seront attachées à un autre réseau.

Implications de la guerre basée sur le réseau et des capacités facilitées par réseau sur les réseaux informationnelles de type C4ISR dans l'Armée Roumaine

Les deux dernières décennies ont marqué la transition de l'humanité dans l'ère de l'information, une nouvelle étape de développement de la société dans laquelle la société moderne est affectée, entre autres,

par le changement technologique explosive. Pour être plus précis, les petites innovations survenues dans la technologie de l'information et de communication sont considérées responsables des changements dans la structure de l'économie mondiale, la politique et la culture. L'utilisation intensive des technologies de l'information et communications a conduit à la cybernétisations du champ de bataille et a changé la philosophie de mener des actions de guerre en prenant une nouvelle naissance de concepts qui décrivent au mieux la nouvelle réalité: la guerre repose sur les capacités du réseau et des installations de réseau.

L'influence du nouveau milieu informationnel sur le développement des actions militaires multinationales au niveau tactique

L'environnement d'informations offre d'avantages des armées qui sont reliés aux nouvelles technologies. Ces avantages se retrouvent dans une opération à un niveau élevé d'information en utilisant les installations de réseau. Au niveau tactique sont utilisées en particulier les communications radio qui fournissent la mobilité et la bande passante nécessaire pour transmettre l'information au plein volume. Les nouveaux concepts et technologies permettent aux pays développés d'entrer dans l'ère d'information, avec les avantages technologiques et doctrinales difficiles à atteindre par d'autres pays. Les technologies de l'âge de l'information vont révolutionner la façon de mener des actions militaires et vont changer la physionomie du conflit.

La stabilité des systèmes de communications et informatiques des forces de terre dans l'espace de combat moderne

La fiabilité est l'aptitude d'un produit pour effectuer une fonction particulière dans les conditions données pendant une certaine période. L'importance de la fiabilité

accrue au cours des 30 dernières années, que les systèmes deviennent plus complexes, les coûts de soutien ont augmenté et diminué les budgets de défense. La fiabilité est un facteur fondamental qui affecte la disponibilité, la rapidité, les coûts et la réussite de soutenir la mission. La recherche concernant la façon dont les erreurs peuvent se produire, le développement d'approches probabilistes pour la conception, la compréhension des distributions d'erreurs dans le temps et d'autres problèmes de fiabilité, toutes ont fait une vraie science.

Le garant d'appui de communications et informatique des troupes roumaines participantes aux missions internationales

Dans le théâtre d'opérations en Afghanistan, la Roumanie a une importante contribution qui a été développée progressivement depuis le début du conflit. La configuration spatiale courante des forces roumaines et les missions reçues et/ou supposées dans les systèmes de soutien dans le théâtre ont influencé la taille de leurs communications et d'information, un processus qui a exigé un effort constant dans toutes les structures impliquées. Depuis le début des opérations, les communications et les systèmes de soutien informatique ont été approchés à niveaux suivants: assurer l'information qui circule dans le pays, la fourniture de flux d'informations de contrôle-commande dans le théâtre avec des structures de haut niveau ou de ceux qui coopèrent, en fournissant les informations de contrôle-commande des flux au sein de chaque structure nationale.

Le processus de modernisation des pays islamiques et ses influences sur la sécurité mondiale

La modernisation dans le monde islamique, dans la perspective de la vie politique, selon de nombreux auteurs occidentaux, vise à changer les systèmes politiques qui régissent les Etats islamiques et à adopter le modèle

occidental, c'est-à-dire la démocratie libérale. Cependant, le passage des sociétés musulmanes et les traditions religieuses d'un autre type d'organisation politico-économico-sociale, dans lequel les valeurs spécifiques à la démocratie libérale prévalaient, n'est pas un processus facile, et les turbulences sociales ne sont pas totalement éliminées de cette approche. En fin de compte, les effets de la République islamique sur la sécurité mondiale sont fait remarquer par une succession des problèmes qui existent dans trois états islamiques: la Turquie, l'Irak et en Afghanistan, afin de mieux reflètent la relation entre la modernisation et la sécurité dans le monde islamique.

Le terrorisme international – délimitations conceptuelles et considérations théoriques (II)

De l'avis de l'auteur, les objectifs du terrorisme peuvent être classés en plusieurs catégories: pour atteindre un but précis – évincer un gouvernement du pouvoir, forçant une armée de quitter le pays; pour obtenir des fonds financiers; pour libérer les prisonniers; pour provoquer de crainte à l'échelle mondiale dans l'espoir de changer l'ordre social dans un Etat. Le terrorisme d'Etat se produit lorsque les actions suivantes sont mises en œuvre par les Etats: les opposants politiques sont éliminés et l'appareil d'Etat utilise des moyens répressifs pour intimidation et afin d'obtenir des informations qui pourraient ne pas être obtenus autrement.

La Roumanie et les Balkans occidentaux par la vision de la sécurité et de la coopération économique (I)

Selon l'auteur, les crises financières et économiques ont eu un impact sérieux sur les pays des Balkans occidentaux. Les politiques monétaires et fiscales des pays des Balkans occidentaux ont un effet régressif sur la distribution et la pauvreté. Économiquement, Roumanie attend une certaine stabilisation et croissance dans un proche avenir. Bien que le PIB a été diminué dans le dernier trimestre de 2010, les indicateurs sont devrait

reprendre la croissance dans cette année. Pour la Roumanie, soutenant le cours européenne et euro-atlantique des États des Balkans occidentaux est une de grandes priorités de la politique étrangère. Le statut de la Roumanie de pays membre de l'UE et de l'OTAN et la proximité de la région des Balkans occidentaux exigent des relations spéciales avec les États de cette région.

Les opérations expéditionnaires dans le contexte de la transformation de l'OTAN – CJTF et NRF

CJTF est conçu pour assurer la flexibilité des forces militaires de l'OTAN. Le concept permet de regroupement des forces pour faire de l'Alliance un modus operandi et à assurer une capacité dans les missions de maintien de la paix de l'OTAN, d'attente pour l'imposition de la force et les opérations de contingence, les circonstances favorisant la force de réaction rapide, avec un déploiement initial de 30 jours ou moins. NRF est un reflet de l'incertitude de l'adaptation future de l'environnement de sécurité de l'Alliance et illustre l'utilisation d'opérations expéditionnaires dans ce nouvel environnement de sécurité. En substance, dit l'auteur, l'initiative de NRF a été conçue comme un élément de fournir les moyens militaires de l'Alliance robustes et agiles dans le même temps.

Déterminantes nationales et internationales sur l'organisation de l'Armée

Atteindre l'objectif de remodeler la structure de commandement et de contrôle, la structure des forces établies par les forces armées roumaines dans la stratégie de transformation et des exigences pertinentes de l'organisation, de l'équipement, de la formation et du soutien sont des tâches complexes qui sont marqués par beaucoup d'envergure nationale et internationale des conditions spécifiques déterminées par l'environnement de sécurité régional et mondial, du stade de développement de la société roumaine, la manière

dont les militaires sont perçus, les missions sont assignées et les ressources sont mises à leur disposition.

Stratégie: la synergie des trois.

Stratégie: plus que la somme des trois

Selon l'auteur, la stratégie est un effort intellectuel et pratique, englobant l'art et la science de la réalisation des intérêts vitaux par un individu, organisation, État ou une entité internationale, habituellement contre un adversaire, grâce à un processus global de définir des extrémités, à articuler les moyens, à développer et à employer des moyens, d'une manière intégrée et avec une perspective à long terme.

Le développement de la stratégie s'avère un effort tout aussi pratique et intellectuel. Pour conclure, il écrit que l'essence de la stratégie repose sur une relation globale et intégrée entre les extrémités et les moyens.

Des changements dans le rapport homme-technique. Les actions militaires déployées dans le Cosmos

La polémologie a inscrit, dans son espace de travail, le thème de guerre extra-espace, y compris tous ses aspects, comme: la technologie de haute performance, de nouvelles caractéristiques du champ de bataille et, certainement, de nouveaux principes, des formes et des procédures en préparons et en menant des actions militaires.

Les équipements technologiques extra-espace, y compris des améliorations apportées par l'effort généreux, devraient être sous un commandement humain.

La gestion courante des opérations terrestres au niveau tactique de l'ISAF

L'auteur adopte une approche lors du conflit militaire en Afghanistan, notamment quant au niveau tactique sont concernées des opérations terrestres, en demandant si toute évolution spectaculaire aura lieu en 2011 dans l'espace de bataille.

Il souligne aussi l'importance d'un système solide et souple de commandement et de contrôle, capable de relever les défis de la terre, étant donné les circonstances d'un immense théâtre des opérations (un pays avec 34 provinces), avec presque inexistante infrastructure et le soutien de la communauté locale.

Délimitations conceptuelles relatif au management d'acquisition-livraison

Les auteurs décrivent les activités dans la chaîne d'approvisionnement et les composants dans un produit qui est livré au consommateur ou l'utilisateur. Par conséquent, une chaîne logistique se connecte aux chaînes de valeur différentes en son sein. L'analyse de la valeur s'applique généralement à la chaîne d'approvisionnement. Toute opération de la chaîne logistique devrait apporter une valeur et, comme tel, on doit chercher continuellement pour obtenir la même valeur pour un coût inférieur. En réalité, très souvent, il n'est pas difficile pour déterminer les coûts de chaque opération dans la chaîne d'approvisionnement, mais sa valeur ajoutée.

Les Casques bleus hongroises en Afrique et un point de vue hongrois sur la Mission des Nations Unies au Mozambique

L'importance des missions de l'OTAN/UE et l'ONU dans la vie des Forces de défense hongroise est bien connue. La plupart des gens ont entendu que les 1 000 officiers, sous-officiers et les soldats peuvent servir à l'étranger au même moment. Il y a un centre de formation à Szolnok, où les candidats peuvent se préparer pour les services internationaux, pourtant, il peut encore être remarqué certaines lacunes en ce qui concerne la formation. Bien qu'il y ait un nombre énorme de gens expérimentés

de différentes missions, il n'y a pas assez de manuels ou des morceaux de l'information basée sur l'expérience de l'Afrique.

L'OTAN et la sécurité énergétique

L'auteur souligne les raisons de l'intérêt de l'OTAN dans la sécurité énergétique, en montrant que l'approvisionnement énergétique peut être pas un défi facile militaire, mais il a clairement une dimension de sécurité. Il mentionne quelques-unes des raisons pour lesquelles alliés de l'OTAN approchent la sécurité énergétique avec beaucoup d'hésitation. Puis, il écrit sur le fait que l'Alliance a réussi au fil des ans de développer un accord «acquis» sur la sécurité énergétique, adaptés aux capacités spécifiques de l'OTAN et reposant sur trois piliers principaux: la stabilité du dialogue, de partage d'information et de renseignement entre les alliés, en projetant de protection des infrastructures essentielles de l'énergie.

Un gendarme oublié – le général de corps d'armée (ret.) Constantin (Piki) Z. Vasiliu (I)

Après des troublantes années, quand l'institution de la gendarmerie roumaine a été condamnée par le régime communiste, depuis la Révolution de Décembre 1989, elle a fait son chemin à ses traditions naturelles. Sur cette piste, il y a le démarche d'enregistrer et de tenter de réhabiliter le gendarme général Constantin (Piki) Z. Vasiliu, commandant de la gendarmerie roumaine entre 1940 et 1944, en mettant en évidence sa personnalité et sa carrière. Il a été le chef de la gendarmerie et le secrétaire d'État, ministère de l'Intérieur dans une période mouvementée et difficile pour le peuple roumain.

Version française par Alina PAPOI

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General Alexandru Averescu visiting the Vatican, September 1926

Source: The National Military Museum, by courtesy of Professor Neculai MOGHOR

Cover 1 and 4: Afghanistan Theatre of Operations – February 2011. Photo: Colonel Dr Mircea TÂNASE



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