

# NEW PERSPECTIVES FOR ENHANCING EDUCATIONAL AND RESEARCH ACTIVITIES ON MARITIME SECURITY PROBLEMS AT N.Y.VAPTSAROV NAVAL ACADEMY

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The Black Sea region underwent considerable changes during the last decade. Concisely, nature of the process is an emergence of a dynamic maritime security environment. Many directions of the changes can be defined.

The first one is the increased number of countries which exercise sovereign rights on the sea territories. This fact is accompanied by growing economic imbalance.

As a result of many factors, a number of “hot spots” appeared in the Black Sea region and its vicinity.

The most significant trend of the new security environment is the shift of military efforts focus from high scale military conflicts to the area of crisis prevention.

As a result, centralized maritime security systems in the Black Sea region, which were dominated by the Navies, have been replaced by multi component models. An inevitable aftermath of this process is a capability gap in the network organized Maritime Crisis Management System (MCMS). The problems in the system have been aggravated by the lack of common Maritime Crisis Management (MCM) education, training, and Command and Control procedures.

The questions we are to answer in order to overcome the problems we met are addressed to the MCMS and are presented by the following logical sequence: “What has happened and changed?”, “Where are the roots of the problems hidden?”, “What is going to be in the future?”, and finally - “What should be done for the purpose not only to get over the recent problems, but also to adapt the system to possible future condition of functioning?”

The paper presents a brief answer to the questions, which is a result of a research done in the Bulgarian Naval Academy “N. J. Vaptsarov”. The research was performed by a team of specialists and is focused both on maritime security problems and the possible ways to enhance educational and research activities in this area.

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The research takes under consideration predominantly the situation in Bulgaria and the opinion expressed by the authors does not present the Bulgarian institutions' formal position.

## I. THE CHANGE OF THE MARITIME SECURITY ENVIRONMENT

The study of the security environment requires making a clear distinction between the types of impact that can affect the maritime security. Traditionally, these impacts are associated with the terms “risks” and “threats”, and some publications include “challenges” as such. Considering the fact that in the existing literature one may come across different interpretations of these terms on this subject, and also that they are frequently used synonymously, defining them becomes methodologically important for this study. As a result of the analysis conducted for the purposes of this study, the terms “challenge”, “risk”, and “threat” are taken to mean as follows:

A **challenge** is a state of the environment that is directly or indirectly orientated against the presence of the governmental institutions, the nongovernmental organisations, and/or the juristic and natural persons in the national maritime spaces (NMS), whereas the adverse effect on their interests is hard to identify and is characterised by a high degree of indefiniteness.

A **risk** is a state of the environment orientated against the presence of the governmental institutions, the nongovernmental organisations, and/or the juristic and natural persons in NMS, whereas it is possible for adverse effects on their interests to occur for an indefinite period.

A **threat** is a state of the environment orientated against the presence of the governmental institutions, the nongovernmental organisations, and/or the juristic and natural persons in NMS, whereas it is highly possible for adverse effects on their interests to occur.

Currently, there are different approaches that offer methodologies for analysing security in a region [7,8]. What all of them have in common is that the negative impacts on security are treated as traditional and new. This approach is adopted as a framework of the analysis.

The **traditional challenges, risks, and threats** are related to the territorial, ethnic, economic, and social issues and contradictions among the states in the region. They are related to tangible manifestations of global and the regional factors, whose influence is reinforced by economic difficulties and inadequate doctrinal and statutory support for the protection of national interests.

Perhaps the most significant negative impact on security in the region is the possibility of using military force against one of the countries in the Black Sea region.

The **new challenges, risks, and threats** that are related to or originate from the sea, have been defined in different national and international documents, and also in

political analyses and assessments of security in the Mediterranean and the Black Sea published by Harvard University [4] and similar think-tanks from Bulgaria, Romania, and the Ukraine. The following issues are the most significant for the specific conditions of the sea: upsurge of transnational organised crime; the resurgence of one of its specific form – piracy; intensification of the danger from different types of terrorism; upsurge of contraband and drug trafficking; uncontrolled proliferation of weapons and military technologies, including WMD components; efflorescence of poaching and predatory plundering of the sea resources; refugee problems; threats to information security, aggravation of environmental problems; technogenic risks, related to industrial accidents and disasters. The majority of the new risks and threats are of a transnational nature and strongly affect the international security.

In modern times, *piracy and maritime terrorism* are among the most dangerous international maritime crimes.

One of the basic problems related to preventing these negative impacts is associated with their identity in international law. Despite the expeditious measures undertaken in this respect after 11 September 2001, up to December 2002 the international legal framework treating maritime transport security matters was voluntary and almost non-existent. Up to present day, only piracy and armed robberies against ships have been defined by UN [10].

The term “**piracy**” as a legal category has gained additional content over the last few years. There are attempts to confer the same status as piracy to some acts of terrorism, which will provide legal grounds to prosecute and prevent acts of terrorism at sea.

Nowadays, piracy is still a frequent event in many regions of the world. It is practised by well-organised transnational structures. According to IMB experts, the main targets for modern-day piracy are bulk carriers and tankers [5].

The regions with high concentration of acts of piracy coincide with the regions of increased terrorist activities. Terrorist forces conduct piratical attacks to fund their main activity. Furthermore, there is a fusion of personnel from criminal to terrorist lines.

Prates also co-operate closely with other criminal groups, particularly in the field of the illegal trade in narcotics, weapons, and human beings.

In the Black Sea, there have been no cases of classic piracy or armed depredation in recent years. This can be explained with the enclosed nature of the Black Sea. On the other hand, being a sea state, the Republic of Bulgaria has repeatedly been faced with the problems of piracy in the World Ocean. The list of incidents with vessels flying the Bulgarian flag, or a foreign one, but with Bulgarian nationals among the crew, is long enough.

In the context of maritime security, *maritime terrorism* is inseparable from piracy, in the sense of the *Convention for the Suppression of Unlawful Acts against the Safety of Maritime Navigation* and the *Protocol for the Suppression of Unlawful Acts against the Safety of Fixed Platforms Located on the Continental Shelf*.

Nevertheless that the international community has not given a thorough and exhaustive definition of the term *terrorism* [11], the terrorism is considered to be a peculiar type of warfare and requires counteraction adequate to the laws of warfare. [2].

The terrorist threats in the Black Sea region have a global dimension and a regional one.

The *global dimension* was insignificant until 11 September 2001. After that, when the USA launched the antiterrorism campaign, it increased dramatically. This is determined by the proximity to regions that are potential sources of threats, and by the fact that most of the nations in the region are participating in the antiterrorism coalition.

The *regional dimension of terrorist threats* has several sources: the existence of unsettled conflicts and potentially dangerous crisis regions; the isolated manifestations of religious extremism; the aggressive separatist aspirations; the economic instability; and etc.

A significant number of terrorist organisations operate in the region. According to the US Department of State, there are seven of them and they are classified as regional. Three of them operate on the territory of Chechnya, two in Turkey and two in Greece [9].

Bulgarian active participation in the antiterrorism coalition poses significant risks for our national security [11].

A considerable problem for the security of the region is ***the illegal trade in weapons, dual-use technologies, and WMD components***. This criminal activity is facilitated by the huge arsenals hoarded in the time of the Cold War.

***The trafficking in different types of narcotics*** in the Mediterranean and the Black Sea is in the process of dynamic changes, characterised by increased consumption, changing channels, increased manufacture of synthetic drugs, and elaboration of criminal networks.

Over the last decade, drug consumption has been increasing at an alarming rate in the entire region. The specific geographic location of the region makes it a crossroad of multi-directional drug channels.

The maritime channels in the Black Sea are of a particular interest. The majority of them start from the Russian or the Georgian coasts and reach the ports of Romania, Bulgaria, and the Ukraine. Some seaborne trafficking is also conducted through the Strait of Bosphorus [1].

Contraband (primarily of different excisable commodities) has its own centuries-old traditions in the waters of the Black Sea. The contraband in the Republic of Bulgaria calls for paying particular attention to the contraband of cigarettes, alcohol, and petroleum products, with an emphasis on the maritime aspects of this criminal activity. The situation became even more complicated in the last few years, when started so called fictitious re-export.

Serious challenges, risks, and threats to security can be generated by ***the trafficking in human beings and illegal migration*** from and across the Black Sea region. The main problems that provoke these illegal activities, such as demographic boom, regional con-

flicts, poverty, etc., cannot be solved quickly, which means that these negative effects cannot be easily eliminated despite the efforts on a national and international level.

*The pollution of the marine environment and environmental disasters* at sea are another potential negative effect on the security in the region. The most serious environmental catastrophes at sea have been caused by spilling large amounts of oil in result of navigational accidents (the Exxon Valdez), engineering reasons (the Erika, the Prestige), or terrorist acts (the Limburg). Also, a grave danger for the marine environment is the deliberate or accidental release of nuclear, radiological, or chemical waste on the sea bottom.

The specific negative effect on the security in the region are the *cybernetic threats* (the threats to information security) against the systems for management of shipping. The reasons to pay particular attention to cybernetic threats are determined by humanity's entrance into the third period of its civilised development and the possibility for accidental or deliberate intrusion into management systems [11].

In recapitulation the following CONCLUSION can be drawn: the emergence of a dynamic maritime security environment in the Black Sea region is a direct result of the dynamic influence of the complex processes in South-Eastern Europe, the Caucasus, Central Asia, and the Middle East, which are considered to be some of the most volatile and unpredictable parts of the world. The significance of the region is determined by the fact that it is both a source of new challenges, risks, and threats itself, and, at the same time, due to its geostrategic location, a natural border for the new threats associated with terrorism.

## II. THE REACTION OF THE BULGARIAN MARITIME CRISIS MANAGEMENT SYSTEM TO THE CHANGES IN THE MARITIME SECURITY ENVIRONMENT

In order to adapt the security system to the dynamic security environment, the Bulgarian MCMS has undergone major changes, whereby two basic trends can be outlined.

Firstly, the replacement of the centralized model of the system with a network organization should be noticed. The leading motive is the necessity of strengthening the civilian control over the work of the state subjects and the national maritime spaces (NMS). The implemented approach foresees the achievement of a relatively high level of demilitarisation of the control in the NMS through delegation of authority to organisations from the structure of other ministries except for the Ministry of Defence. The approach embodies the idea of achieving synergy in the joint efforts of the MCMS's components.

As far as the indicated trend relates to a great extent to the structural aspects of the Bulgarian MCMS, the next change rather applies to the functional purpose of the

system and can generally be summarized as a shift of focus of the MCMS's efforts from a reaction to concrete situations to preventive action. The direct effect of that trend is the increased importance of the surveillance in the NMS.

Both trends are closely connected and practically indistinguishable. In result, functional dimensions of the responsibilities in the sphere of maritime security appeared, being addressed either to pre-existing or newly established actors. Inevitably, this redistribution of responsibilities in the maritime security system caused a vacuum of the capabilities within the functional dimensions. As far as a part of the actors increased their relative autonomy within the system and/or expanded their sphere of responsibility, while others were newly established, what the two processes had in common was that in both cases the new legal rights and obligations were not upholstered with the required capabilities. The process of restructuring coincided, and, to a large extent, caused a growth of the factors threatening maritime security. Because of this, the optimization of the maritime security system was done in response to concrete challenges and incidents and, logically, to a situational approach.

The systemic aspect of the situation in place can be defined as **dehierarchisation of the maritime security system, in result of which a situationally-dominated, spontaneous self-organization took place among the components on the coherence line.**

The practical dimensions of the self-organization were interagency statutes and agreements drawn up in response both to specific obligations to the EU and international agreements and to specific incidents. Although this approach provided the stability in purpose of the maritime security system, it should be noted that, under the conditions of transition and on the basis of the interagency agreements, executive bodies, including interagency ones, came into being and received substantial legal rights on the basis of the obligations that were assigned to them. Practically, conditions for establishing sub-systems within the maritime security system were created. As far as the difference between a system and sub-system can be defined through the scale of observation, it should be noted that all the system's properties can be observed on the subsystem level as well.

Assuming that all components of the national maritime security system have their own statutes, management bodies, spheres of responsibility, executive units, legal rights, and budgeting, it can be maintained that they are differentiated subsystems. In this context, it is interesting to note the "*drive for self-reproduction*" that is typical of the systems of the class organizations. Its typical manifestations are both the aspiration to expand the borders of the system and the ambition of retaining structures and functional models even after their purpose has been exhausted. These two trends are one of the generators of intersystem conflicts. The negative consequences of these conflicts are aggravated in the conditions of resource scarcity or by an approach related to allocation of resources by the suprasystem and based on the principle "*you counteract... - you receive...*".

It should be noted that, due to a number of factors, the situation described hold god for the national MCMS. This fact resulted in the following aftermaths: duplication of structures and disintegration of efforts, lack of coordination in the course of exercising control and especially in rendering critical services, lack of uniform management procedures, lack of uniform understanding for the problems on the part of the managing staff, absence of unified requirements to the training of personnel and the equipment and support provided to them. In result of all this, the different institutions, with their scanty resources and extremely insufficient personnel, work on their own and with no coordination, or co-operate incidentally. Practise has shown that they fail to be a reliable instrument for protecting maritime sovereignty due to the lack of the needed transparency among them, while there is even rivalry at times. The new type of threats to national security cast a shadow of doubt on their effectiveness in a complicated crisis situation.

This translates into a situation where a long-term strategy for countering the challenges, risks, and threats to maritime security is yet to be developed and implemented. Creating such a strategy is further impeded by the absence of integrated processes and procedures for decision-making on a national and an international level in order to respond in the event of crises in the maritime spaces.

It is self-evident that building up and efficient and effective MCMS is only possible on the basis of a thorough academic analysis of the problematic areas, realized in close co-operation between all the organizations that perform activities in the maritime spaces. The leading role in this process should be assigned to *N. Y. Vatsarov* Naval Academy as a well-established and licensed centre for training maritime personnel. In addition, the Naval Academy will provide connections with all the Bulgarian MCMS's components.

### III. WHAT IS THE SECURITY ENVIRONMENT GOING TO BE IN THE FUTURE?

The possible “picture” of the world is presented by the CIA report published in 2000. According to the report, known as the “apocalyptic” [3], the world will face with by 2015:

- **global terrorism** – the international terror groups and organized crime, are anticipated to make a stand against the specialized government services, including the use of WMD as means of exerting pressure. The terror groups and the organized crime are expected to unite.

- **mass migration and population growth** – hosts of refugees are expected to move from Latin America and South-Eastern Asia to North America and From Northern Africa, the Middle East, and Central and South-Eastern Europe to Western Europe. By 2015,

the population of the world will be 7,2 milliard people. In Africa, the population will decrease due to AIDS and malnutrition. Russia and Eastern Europe will also see a drop in population. Ageing of the population will emerge in Western Europe, the USA, and Japan.

- **famine, shortage of water and energy** – in 2015, more than a half of the population of the world will live in shortage of water;

- **ethnic conflicts** – instead of the wars typical of the 20th century, regional conflicts that are harder to predict and more difficult to manage are expected;

- **diseases** – although the rapid development of medicine, it is expected that bacteria will become resistant to antibiotics, viruses will mutate, and mass migration will be conducive to the spread of lethal infections, tuberculosis, malaria, hepatitis, and AIDS.

Although the objectivity of the report was questioned at first and it was dubbed to be “apocalyptic”, the events that followed proved its validity. The report illustrates a familiar picture regarding the real situation in the Mediterranean and the Black Sea.

In result of the analysis performed, we defined a **possible security environment in the Black Sea region**.

In the early 21<sup>st</sup> century the likelihood for using military force against one of the countries in the Black Sea region is minimal. However, a danger of using military force in the region can result from failure to resolve the separatist conflicts in the region.

The most significant role among new challenges, risks, and threats in the region will be played by the **terrorism**.

Regarding the problems of maritime security in relation to terrorist acts against targets at sea, the following can be expected: terrorist attacks with conventional weapons or WMD; using a merchant ship as a ramming device or as a mean of transportation [6, 11].

The factors that are most likely to attract the attention of international terrorism to the Black Sea are:

- the possibility to interact with the structures of the organised crime;
- the fact that the region is an important crossroad in the illegal trafficking in narcotics;
- the possibility to create terrorist cells on the basis of existing Islamist organisations;
- the favourable conditions for infiltration by members of terrorist structures, building up sleeper cells and using them to penetrate the European states.

The terrorism threat in the Black sea region also will have its concrete negative economic consequence. The routes of some of transcontinental projects related to transport, communications, and energy carriers go by (are designed to go across) unstable regions.

*The illegal trade in weapons, dual-use technologies, and WMD components* in the region could be stimulated by some nonstate actors, such as the movements of



HAMAS and Hezbollah and could be directed to Syria, Iran, Libya. Although they are carrying out transfers of conventional weaponry only, there are serious grounds to believe that they are making efforts to acquire WMD and the means of delivering them to the target.

In terms of *the trafficking in different types of narcotics*, the analysis performed gives grounds to conclude that the two tendencies, referring to the diversification of the routes and their shift to the north, will continue to develop. These conditions make the maritime route across the Black Sea (and, potentially, up the Danube) particularly attractive for traffickers, as it grants them direct access to the EU states.

The *contraband* of cigarettes, alcohol, and petroleum products will continue to be a challenge. The number of typical cases of contraband, performed by fishing boats in the high seas, is expected to decrease in contrast to the number of cases of fictitious re-export.

*The trafficking in human beings and illegal migration* from and across the Black Sea region is going to be a serious challenge. The institutional measures that are being taken in Bulgaria to suppress this process will redirect the wave of migrants to our maritime borders.

The risks of *pollution of the marine environment and environmental disasters at sea* will increase, because of the expected intensification of tanker shipping in the Black Sea after the completion of the project Novorossiysk – Bourgas – Alexandroupoli.

#### IV. WHAT SHOULD BE DONE FOR THE PURPOSE TO GET OVER THE RECENT PROBLEMS, AND TO ADAPT THE MCMS TO POSSIBLE FUTURE CONDITIONS OF FUNCTIONING?

The maritime security environment is presented by the following conclusions:

1. The dynamic security environments in the Black Sea region has resulted in the appearance of a new set of challenges, risks, and threats to the maritime security.
2. The traditional challenges, risks, and threats to the maritime security have decreased in intensity but they remain still valid.
3. There is little room for optimism regarding successful resolution of the regional maritime security problems in the following decades.

On this background, the Bulgarian MCMS suffers an intersystem conflict, driven by the MCMS components' will to expand their structure and to keep their status quo.

The intersystem conflict in the MCMS logically lead to the question: can any steps be taken to circumvent problems? In practise, the answer is positive.

The first option is to solve the problems by a "forceful" intervention on the part of the suprasystem. Such an approach presupposes a sound academic argumentation for the restructuring of the system. Despite the rational value of this option, it would be

difficult to implement, because it is expected to meet stiff resistance from the MCMS's components whose interests are put at stake by the realisation of the system. This difficulties are likely to manifest by lobbying, which, combined with the inherently high degree of subjectivism typical of decision-making in conditions of critical functioning of systems, restructuring processes often being like this, can lead to an abrupt drop in the functional parameters of the MDMS, and even to making a situational decision, inadequate in the long run.

The second approach counts on the idea to form up a collective decision, shared by all the actors of the system, for the necessity of and the way to restructuring the organisation by means of academic communication. Obviously, this option relies on the altruism of the components' management bodies and their inclination to undertake actions in protection of the common interests, which may be incongruent with their personal interests. Such an approach is more optimistic than realistic. Nevertheless, the idea involving a collective decision made by means of academic communications should be developed further.

The third approach practically utilises this option, but realises through the secondary connections among the components of the maritime security system. The underlying idea involves surmounting the potential antagonism in the interests of the actors of the system by artificially interconnecting them on the basis of uniform understanding of security matters and the concomitant uniform approach in addressing them. This can be achieved by **gradually renewing the personnel of the system**, while developing the human resources at a centre for training highly qualified specialists. Obviously, it is necessary to involve young researchers in their capacity of future managers of the MCMS's components. Considering the necessity for a gradual transformation of the system, this requirement should be developed further into the necessity for the training environment for the young specialists to be constantly acting, based on academic communication, and a collective forum of the MCMS's components. Such an approach would ensure continuity in the organisation.

A proper approach to organise and run activities related to the possibility to enhance the mechanisms for MCN in the Black Sea region consists of recommendations for:

1. The goals of the undertaking.
2. The composition of the participants in the undertaking and its general design.
3. The system of objectives for achieving the goals and a general methodology.

Before setting out to formulate such recommendations, the problem with the format of such an undertaking needs to be solved. Due to many reasons, it should be accepted that the undertaking will be realised in the form of an **international initiative (project)** for enhancing the interagency and international mechanisms for MCM in the Black Sea region.

The first problem that any scientific activity should solve is setting the goals. The overall goal of the initiative is **to create the prerequisites for ensuring security at**

**sea in the long term and in any conditions of the environment.** The leitmotif in the goal is realising adaptiveness in the functioning of the MCMS. While the key word is “adaptiveness”, the goal should be broken down in terms of the time dimensions of the adaptation processes.

Classically, a system carries out its function on the basis of continuously adapting to the conditions in which it does so. Three functional dimensions can be observed in the process of adaptation: short-term; long-term; and evolutionary adaptiveness. Since the maritime security system generally has adaptive function regarding the society, the goals of the undertaking should be analysed in this context.

Short-term adaptiveness takes place in response to particular situations. It is direct and situationally-dominated process. This is why this aspect of the adaptation is primarily associated with the functional aspect of systems. Therefore, and also considering the current status MCMS, the first set of tasks to be solved should be functionally directed as follows:

1. Developing methodology and a centre for training the components of the MCMS.

2. Generating standard procedures and mechanisms for MCMS's components to interact in the process of carrying out their function.

Since short-term adaptation is vital for the system as a whole, its goals should include a set of measures aiming at creating the necessary conditions for adapting in the long term. This necessitates the introduction of another short-term goal, generally formulated as:

3. Creating conditions for the realization of the long-term goals of the undertaking.

The next levels of adaptiveness are associated with the functioning of the MCMS in the long run, and are aiming at maintaining its ability to carry out its function while changes are occurring. These conditions should be analyzed on the basis of the content of the changes that bring about a new situation of functioning. In broad terms, three cases are possible:

1. The changes in the conditions of functioning occur in result of different combination of familiar risk factors for maritime security, as well as changes in the scale of their manifestation. As regards the intersystem aspect, sources of such changes are the planned transformation of the system, the refocusing of efforts, the incidence of a “moderate” intersystem conflict, i.e. such changes that, without threatening the integrity of the MCMS, go beyond the possibilities offered by the short-term adaptive processes and appear to be their logical continuation on the basis of summarized experience.

2. The changes in the conditions of functioning occur in result of an abrupt escalation of familiar negative factors in the logical sequence of “challenges – risks - threats”, the appearance of new factors and/or unforeseen combination of them. The intersystem “generators” of such changes are the result of abrupt structural modifications,

including the disintegration of the system, acute shortage of resources, depletion of the goal of functioning, and/or a sudden transition to a new goal. That is, the changes that occurred, even if predictable, bring up the question of the system's survival.

3. The changes in the condition of functioning occur in result of unpredictable factors and are always accompanied with disintegration processes within the system, both in result of physical disadvantage and a bitter intersystem conflict.

A common thing in the content of the first two cases of a change in the conditions of functioning is their relative predictability. On this basis, they are associated with the so-called long-term adaptiveness.

The third case is characterized by a high level of unpredictability of the condition of functioning and corresponds with the processes of the so-called evolutionary adaptiveness.

As regards the necessity for a long-term adaptiveness of the MCMS, it is met by two sets of tasks. The first one, like the short-term adaptiveness goals, addresses functional aspects. The second group corresponds with the necessity for structural changes of the system. The two task sets should be presented separately.

As regards long-term adaptiveness, the functionally-directed goals are:

1. Dissemination of the functional MCMS's model from a national to a regional level.

2. Developing scenarios for potential conditions of the security system's functioning and the corresponding functional models.

Realizing these two sets of tasks should be supported by developing and implementing adequate structural models. Long-term adaptiveness in structural aspect should include:

3. Optimizing the structure in order to support the goals of functioning and their realization strategies.

Considering the interactive character of the process of designing system architecture, the goal of the undertaking to create the prerequisites for the realization of the long-term goals of the initiative should be specified, formulated in the context of the short-term adaptiveness:

1. Analysis of the functioning of the system and the status of the environment and development of recommendations for optimizing the strategy and technology of purpose.

2. Analysis of the functioning of the system and the status of the environment and development of recommendations for optimizing the structure of the system

Since it was pointed out that the changes in the conditions of the functioning of the system can result from unpredictable factors, the necessity to create conditions for the realization of the long-term goals should be developed further.

The practical dimensions of the likelihood for unforeseen situations of functioning to occur boil down to impossibility to develop functional models of the system in ad-

vance. In fact, the only possible approach is to provide the structure of the MCMS with a set of features that would contribute to the process of adaptation in an unforeseen situation. On this basis, the necessity to create conditions for the realization of the long-term goals should be developed in the following aspect:

3. Creating conditions for continuous adaptation of the system to the widening content of the term “security”.

Regardless of its conceptual formulation, this goal has specific dimensions, which can be detailed in the following aspects:

- establishing and maintaining an environment for academic communication, where the MCMS’s components participate voluntarily and on equal footing;
- establishing and maintaining a centre for research in the sphere of MCM;
- creating and maintaining system for training a potential of personnel.

These three functional aspects are a strong argument in support of the statement that the tasks related to the continuous adaptation of the system to the widening content of the term “security” can be solved by **establishing and maintaining a Centre of Excellence (CoE)** dedicated to the matters of maritime crisis management.

Since a large number of goals were formulated, they have to be systematised.

The main goal of the undertaking should be focused on the possibility for long-term adaptiveness of the MCMS while contributing to circumventing the sources of intersystem conflict. In this line, **the main goal of the process should be focused on the possibility to establish and maintain a CoE dedicated to maritime crisis management.**

Taking into account the fundamental role of the processes of short-term adaptiveness, the main goal should be supported by the following objectives:

1. Developing a methodology and a centre for training the MCMS’s components .
2. Generating standard procedures and mechanisms for interoperability.
3. Analyzing the functioning of the system and the status of the environment and developing recommendations for optimizing the MCMS’s structure and strategy.

Although they are directly related to the long-term adaptation of the security system, the following objectives should also be input in the undertaking.

4. Developing scenarios for potential conditions of the functioning of the MCMS and the corresponding functional models.

5. Harmonization of the national functional model with the existing regional models.

Methodology is closely related to the objectives for achieving the goals. Chronologically the first group of issues to be solved involves an analysis of the conditions of the MCMS functioning. In this context, the following tasks can be defined:

1. Analysis of the environment where the MCMS functions.
2. Analysis of the challenges, risks, and threats to maritime security.

In result, a real picture of the security situation should be obtained. This includes:

- rights and responsibilities of the MCMS, as well as their statutory foundation;
- a general description of the environment where the MCMS functions;
- a description of the challenges, risks, and threats to the MCMS, including their sources, possibility for escalation, frequency and scale of their occurrence, potential consequences, as well as trends in their development. The legal grounds that allow and oblige the maritime security system to counter these factors should be revealed here.

The results of the analysis presented in the first part of this paper are a good starting point for the first and second tasks.

Furthermore, the analysis of the conditions of functioning of the MCMS inevitably includes a set of tasks studying the functional suitability of the system concerning the goals set for it. The following task should be defined:

3. Analysis of the capacity of the MCMS for adequate accomplishment of its goals.

In result of solving this task, the following should be expected:

- clarification of the goals, the functional model, and the structure of the MCMS;
- clarification of the statutory foundations of the MCMS;
- discovering the functional aspects of the activities of the MCMS and its composition and the organisation of the components engaged in these aspects;
- analysis of the capacity of the MCMS to counter the challenges, risks, and threats;
- formulating recommendations for functional and structural optimisation of the MCMS;

The above results from solving the first three research tasks are a suitable basis for developing the next four functional aspects:

- tasks related to solving specific issues discovered in the analysis of the conditions of functioning of the MCMS;
- tasks related to prognosticating the future conditions of functioning of the MCMS and developing recommendations for the optimization of the system.

The next tasks are:

4. Developing procedures and mechanisms for interaction for the MCMS's components.

5. Developing a methodology and a centre for training for the MCMS's components.

In result of solving these tasks, the following should be expected:

- developing functional models of response of the system in standard situations;
- developing standard procedures for planning the response of the system in the conditions of a maritime crisis;

- developing standard procedures for interaction of the components, both under normal conditions and in case of a crisis;
- developing a methodology and procedures for training the MCMS's components;
- developing a centre for training the components of the MCMS;
- developing a structural model of the system in support of its functioning.

The classic approach to response in a problem situation consists in analysing the problem and answering the question whether this is a familiar situation and, if so, whether there is model for solving the issues that has already worked. The following task is formulated:

6. Comparative analysis of existing models for the MCM Systems and studying their applicability to the problem areas defined.

In result of solving this task, the following should be expected:

- studying the experience in the sphere of MCM and systematising the existing models;
- to discover theses, ideas, and models from the theory and practise of development and functioning of MCMS, applicable in the conditions of the undertaking.

The academic approach requires that, before a developed model is implemented into practise, its applicability should be verified by conducting a number of experiments. This verification should be done on the basis of properly developed scenarios, modelling the conditions of functioning of the MCMS. The following task should be defined:

7. Developing scenarios for the conditions of functioning of the MCMS.

The results of solving this task should be found in two aspects:

- developing scenarios for the conditions of functioning of the MCMS and the respective generic models of response;
- discovering the trends for changes of the conditions of functioning of the MCMS.

The first group of results directly corresponds with the necessity to test the results from the research and the theoretical works. This allows the formulation of the next task:

8. Validation of the system models developed in artificial conditions

In result of this task, the system models should be tested by means of the scenarios developed. The classic option for such a test is a computer-assisted exercise with the participation of the components of the MCMS. This task corresponds with the necessity to develop a methodology and a centre for training the components of the MCMS.

The second functional aspect of the results of scenario development is also of interest: discovering trends for changes of the conditions of functioning of the MCMS. This result corresponds with the idea for developing and implementing mechanisms for adaptation of the MCMS in a long-term perspective. The following task should be formulated:

9. Developing recommendations for structural changes aimed at optimising the MCMS in the long run.

In result of solving this task, the following should be expected:

- discovering trends in the development of the conditions in the security environment;
- developing a system of scenarios for the maritime security environment;
- developing flexible functional models of the MCMS;
- formulating recommendations for optimising the structure of the MCMS in order to enable it to adapt to the prognosticated conditions of functioning.

Since the process of adaptation occurs continuously, the results of the undertaking should be an open system, subject to further development. Also, the main goal, involving the possibility to establish and maintain a CoE on the matters of MCM, should be considered here. On this basis, the following task should be formulated:

10. Establishing a permanent Centre for analysing the conditions of functioning of the MCMS and for generating recommendations for optimising its functioning.

The expected result of solving this task should be the establishment of a forum about maritime security matters, which should be permanent, should unite all the components, and should be an environment for exchange of academic argumentation. This approach also meets the requirement for establishing a centre for preparing young specialists.

Since solving this task requires the use of the results of all the other tasks, it can be considered that it finalises the undertaking to enhance the interagency and international mechanisms for maritime crisis management in the Black Sea region.

When the system of tasks is supplemented with the academic methods of solving them, the methodology for achieving the goals of the research is formulated.

As a unique centre for naval science and marine technology the “N. J. Vaptsarov” Naval Academy is ready to take the challenge and to lead an initiative aimed to enhance interagency and international mechanisms for maritime crisis management. Research and development activities are an integral part of the Academy’s life.

The Naval Academy’s team unites the efforts of the best specialists in the Republic of Bulgaria in the sphere of maritime crisis management and security, including scientists and maritime transportation specialists. This team is determined to turn the Academy into a think-tank, which formulates modern maritime security policy and develops MCM theory and practice.

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