

STRUCTURED DESCRIPTION OF NAVAL TASKS

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Abstract: This article demonstrates the results of an effort to structure the missions and tasks of the Bulgarian Naval Forces with the objective to establish the operational architecture of the Naval Sovereignty Operational Center (NSOC) and the Shore-based System for Control of Shipping (SSCS). This development has been approached via the C4ISR Architecture framework. The missions and tasks of the Bulgarian Navy are systematized at three levels – strategic, operational and tactical.

The changes in the risks and threats to national security, the growing economic activity and the liberalization of the regime of navigation in the maritime spaces and the adjacent economic zone create a completely new environment for the control of forces and resources of the Bulgarian Navy. There are increasing risks of accidents at sea, including those of vessels transporting dangerous goods, risks of smuggling, illegal trafficking of drugs, people, arms and possible dual-use goods, and risks of terrorist threats and activities at sea. In this situation, there is a growing need not only for a more efficient management of the Navy, but also for ensuring an effective interoperability among all the organizations responsible for national security and safety of navigation, defense of the sea borders, environment protection, etc. These issues can be resolved with the implementation of modern communication and information technologies and sensors, ensuring a new quality of information collection, situation assessment, decision-making and control.

Taking into consideration these issues, in the fall of 2002, a team of scientists from the Central Laboratory for Parallel Processing of the Bulgarian Academy of Sciences, the “G.S. Rakovsky” Defense and Staff College, and the “N.Y. Vaptzarov” Naval Academy conducted a study entitled: “*Design and establishment of an operational center for marine sovereignty and shore-based system for control of shipping along the Bulgarian Black Sea coast.*”

The main objective of the study was to develop the operational architecture and to define the operational requirements of the Naval Sovereignty Operational Center

(NSOC) and the Shore-based System for Control of Shipping (SSCS). The study was part of a larger project aiming to ensure efficient application of modern communication, information and sensor technologies in order to guarantee marine sovereignty and control of shipping by the Navy, in cooperation with other governmental bodies, local authorities, commercial companies, allies, partners and NGOs working in this and other related fields.

Within this study, the team has solved a number of separate tasks, one of which was a structured description of the *missions and tasks* of the Bulgarian Navy, a description of the types of *operations*, their main characteristics, and the operational formations of the forces controlling the national sea spaces.

To solve this problem meant to develop a system architecture of NSOC and SSCS, which was achieved on the basis of the operational architecture software; the specifically defined organizational structure, respectively the specific type of physical operational nodes; the specific number and characteristics of the sensors, sensor systems and the data transmitted by them; the available information about existing and anticipated bodies, command posts and information sources of interacting organizations; and the requirements for NATO membership preparation. The study was conducted in compliance with the requirements of the *DoD Architecture Framework, Version 2.0*.^{1,2,3}

The essential results related to the structured description of the *missions and tasks* of the Bulgarian Navy, are presented in the current article.

The missions and tasks of the Navy as part of the Bulgarian Armed Forces are presented in various doctrinal documents such as the Military Doctrine, the Military Strategy, the White Paper on Defense, and the Naval Doctrine.⁴ According to the White Paper, the Naval Forces have three missions:

- To contribute to the national security in peacetime;
- To contribute to peace and stability in the world;
- To participate in the defense of the country.

According to the doctrinal documents, in peacetime, the Naval Forces maintain a favorable operational regime in Bulgaria's maritime spaces and participate in contingents for operations other-than-war when required. In wartime, the Naval Forces, either independently or jointly with the other services and branches of the Armed Forces, block the enemy's aggression from the sea, secure the maritime communications and render assistance to the littoral flank of the Land Forces.⁵ These tasks are developed in more detail in the Naval Doctrine.

In the development of the operational architecture of NSOC and SSCS, the team adopted an approach that builds a C4SIR system as part of the meta-system for strategic management, command and control of the armed forces, where part of the routine human intellectual functions of information gathering, dissemination and processing are transferred to the system and in which the mission and the doctrine of the armed forces, the organization, resources, technologies, knowledge, experience and traditions of personnel and leaders are integrated.

The *essence* of the C4SIR system can be revealed through selection and analysis of that part of the human information processing activities that is susceptible to formalization, standardization, unification, automation, and integration within a common process of: receiving, collecting, transferring, processing, storage, visualization, protection and preparation to use information. The analysis results in the formation of the underpinning functional (operational) concept of the system, in which it is interpreted as a tool for supporting the strategic management, command and control of large social organizations. In this interpretation, C4SIR is a big and complex human-machine system, which is generally created to serve as an “amplifier” of the human cognitive abilities.

The *mission* of the C4SIR system is to assist managers, commanders and staff in the processes of strategic management, command and control of organizations throughout all steps, stages and phases of the activities or operations that they conduct, by providing them with the information required for making or enacting decisions. The accomplishment of this mission results in a prompt decrease of the uncertainty in the assessment of situations and threats, prior to decision-making.

According to standard classification, command and control levels are divided into: strategic (national), operational (joint – as a rule), and tactical. Since command and control are realized as an uninterrupted dynamic cyclic-reversible process with conditional components, its maintenance (in the whole spectrum of situations and threats) requires a clear and accurate definition of the functions performed at all these levels. This is accomplished on the basis of methods and techniques from systems analysis, according to which these functions are divided (decomposed) and afterwards classified, arranged in groups, and defined as separate subsets of tasks performed in peacetime, in humanitarian non-military operations, at crisis situations of civil character, in peacekeeping operations, and during participation in armed conflicts with different degree of intensity.⁶

Each of these subsets is distributed and associated with the “nodes” of the hierarchical command and control structure; for each of the possible situations and threats accurate procedures for work and interaction that every node should perform and maintain are established. This allocation is the crucial point in the design of the so-

called “operational architecture” of the system for strategic management, command and control. The operational architecture of the C4ISR system supplements it, providing an additional set of tools for the maintenance and exploitation of strategic management, command and control.⁷

In meeting the requirements for clear and accurate definition of the functions of NSOC and SSCS at the three command and control levels, it was found reasonable to specify the activities performed by the Bulgarian Navy in a hierarchically structured comprehensive system of tasks at strategic, operational, and tactical level, respectively. The application of such an approach makes possible not only the accomplishment of the objective of the present study, namely developing and improving the system of Naval Forces control, but also the objective of other research and studies related to optimization of personnel, organization, basis for operational and combat utilization of the Naval Forces, which also apply the system approach and the theory of meta-systems.

Analysis of the conducted research leads to the conclusion that in the proposed hierarchical structure of tasks not all of them are traditionally performed by the Navy. Part of these tasks is carried out (or will be carried out) only when naval formations participate in NATO or other allied operations.

In addition, consideration should be taken of the fact that the proposed system of tasks is a function of the available resources and the existing national and allied views on using the naval forces. In this sense, the proposed hierarchical structure of tasks should be considered open and amenable to further development and elaboration in case of a change of the determining factors. The restricted size of this publication does not allow presenting the entire list of activities and missions performed by the Bulgarian Navy at the three levels of command and control. Therefore, we present a structuring of the activities, showing only the details up to the second sub-level. It should be emphasized that the proposed structuring differs considerably from that in the adopted doctrinal documents of the Bulgarian Navy; however, it is in a full compliance with the Universal Naval Task List.^{8,9,10}

Strategic Level Tasks

ST 1 Deploy, Concentrate, and Maneuver Theater Forces

Not to be conducted independently. When a Bulgarian Navy unit is deployed to another theatre with other NATO forces, task ST1 should be performed. It is assumed in the structuring of the naval tasks that the Bulgarian Navy carries out mainly tasks at the Black Sea Theater.

ST 2 Develop Theater Strategic Intelligence, Surveillance, and Reconnaissance

ST 2.3 Process and Exploit Collected Theater Strategic Information

ST 2.4 Produce Theater Strategic Intelligence and Prepare Intelligence Products

SN 3 Employ Forces

SN 3.1 Coordinate Forward Presence of Forces in Theaters

SN 3.4 Protect Strategic Forces and Means

ST 4 Sustain Theater Forces

Coincides with OP 4.

ST 5 Provide Theater Strategic Command and Control

ST 5.1 Operate and Manage Theater Communications and Information Systems

ST 5.2 Assess Theater Strategic Environment

ST 5.3 Determine Strategic Direction

ST 5.4 Provide Strategic Direction to Theater Forces

ST 5.5 Coordinate Theater-Wide Information Warfare (IW)

ST 5.6 Provide Public Affairs in Theater

SN 6 Conduct Mobilization

SN 6.1 Prepare for Mobilization

SN 6.4 Move to Mobilization Station

SN 6.5 Prepare Units and Individuals at Mobilization Station (MS) for Deployment

SN 6.7 Provide Command and Control over Mobilized Units and Individuals

ST 6 Provide Theater Protection

ST 6.1 Provide Theater Aerospace and Missile Defense

ST 6.2 Provide Protection for Theater Strategic Forces and Means

ST 6.3 Secure Theater Systems and Capabilities

ST 7 Establish Theater Force Requirements and Readiness

ST 7.1 Recommend Warfighting and Other Requirements and Test Concepts

ST 7.2 Maintain and Report Readiness of Theater Forces

ST 8 Develop and Maintain Alliance and Regional Relations

ST 8.1 Foster Alliance and Regional Relations and Security Arrangements

ST 8.2 Provide Support to Allies, Regional Governments, International Organizations or Groups

ST 8.4 Provide Theater Support to Other DOD and Government Agencies

ST 8.5 Coordinate and Integrate Regional Interagency Activities

Operational Level Tasks***OP 1 Conduct Operational Movement and Maneuver***

OP 1.1 Conduct Operational Movement

Not to be conducted independently. It is applied when a naval unit of the Bulgarian Navy deploys in a different international theater within NATO forces. In such cases it includes:

OP 1.2 Conduct Operational Maneuver

OP 1.3 Provide Operational Mobility

OP 1.4 Provide Operational Countermobility

OP 1.5 Control or Dominate Operationally Significant Area

OP 2 Provide Operational Intelligence, Surveillance, and Reconnaissance

OP 2.1 Plan and Direct Operational Intelligence Activities

OP 2.2 Collect Operational Information

OP 2.3 Process and Exploit Collected Operational Information

OP 2.4 Produce Operational Intelligence and Prepare Intelligence Products

OP 2.5 Disseminate and Integrate Operational Intelligence

OP 2.6 Evaluate Intelligence Activities in Theater of Operations/JOA

OP 3 Employ Operational Firepower

OP 3.1 Conduct Joint Force Targeting

OP 3.2 Attack Operational Targets

OP 4 Provide Operational Support

OP 4.1 Coordinate Supply of Arms, Ammunition, and Equipment in Theater of Operations/JOA

OP 4.2 Synchronize Supply of Fuel in Theater of Operations/JOA

OP 4.3 Provide for Maintenance of Equipment in Theater of Operations/JOA

OP 4.4 Coordinate Support for Forces in Theater of Operations/JOA

OP 4.5 Manage Logistic Support in Theater of Operations/JOA

OP 4.6 Build and Maintain Sustainment Bases

OP 4.7 Provide Politico-Military Support to Other Nations, Groups, and Government Agencies

OP 5 Exercise Operational Command and Control

OP 5.1 Acquire and Communicate Operational Level Information and Maintain Status

OP 5.2 Assess Operational Situation

OP 5.3 Prepare Plans and Orders

OP 5.4 Command Subordinate Operational Forces

OP 5.5 Organize a Joint Force Headquarters

OP 5.6 Employ Operational Information Warfare (IW)

OP 5.7 Coordinate and Integrate Joint/Multinational and Interagency Support

OP 5.8 Provide Public Affairs in Theater of Operations/JOA

OP 6 Provide Operational Protection

OP 6.1 Provide Operational Aerospace and Missile Defense

OP 6.2 Provide Protection for Operational Forces, Means, and Noncombatants

OP 6.3 Secure Systems and Capabilities in Theater of Operations/JOA

OP 6.4 Conduct Deception in Support of Subordinate Campaigns and Major Operations

OP 6.5 Provide Security for Operational Forces and Means

Tactical Level Tasks

NTA 1 Deploy/Conduct Maneuver

NTA 1.1 Deploy Naval Tactical Forces

NTA 1.2 Navigate and Close Forces

NTA 1.3 Maintain Mobility

NTA 1.4 Conduct Countermobility

NTA 1.5 Dominate the Combat Area

NTA 2 Develop Intelligence

- NTA 2.1 Plan and Direct Intelligence Operations
- NTA 2.2 Collect Information
- NTA 2.3 Process and Exploit Collected Information
- NTA 2.4 Produce Intelligence
- NTA 2.5 Disseminate and Integrate Intelligence

NTA 3 Employ Firepower

- NTA 3.1 Process Targets
- NTA 3.2 Attack Targets
- NTA 3.3 Integrate Tactical Fires
- NTA 3.4 Organize Fire Support Assets
- NTA 3.5 Conduct Coordinated Special Weapons Attack

NTA 4 Perform Logistics and Combat Service Support

- NTA 4.1 Arm
- NTA 4.2 Fuel
- NTA 4.3 Repair/Maintain Equipment
- NTA 4.4 Provide Personnel and Personnel Support
- NTA 4.5 Provide Transport Services
- NTA 4.6 Supply the Force
- NTA 4.7 Perform Civil Military Engineering Support
- NTA 4.8 Conduct Civil Affairs in Area
- NTA 4.9 Train Forces and Personnel
- NTA 4.10 Perform Resource Management
- NTA 4.11 Provide Operational Legal Advice
- NTA 4.12 Provide Health Services
- NTA 4.13 Conduct Recovery and Salvage

NTA 5 Exercise Command and Control

- NTA 5.1 Acquire, Analyze, Communicate Information and Maintain Status
- NTA 5.2 Assess Situation
- NTA 5.3 Determine and Plan Actions and Operations

NTA 5.4 Direct, Lead, and Synchronize Forces

NTA 5.5 Plan and Employ C2W

NTA 5.6 Conduct Information Warfare

NTA 5.7 Conduct Acoustic Warfare

NTA 5.8 Establish a Task Force Headquarters

NTA 5.9 Provide Public Affairs Services

NTA 6 Protect the Force

NTA 6.1 Enhance Survivability

NTA 6.2 Rescue and Recover

NTA 6.3 Provide Security for Operational Forces and Means

NTA 6.4 Provide Disaster Relief

The need for applying new approaches when determining the missions and tasks of the Naval Forces of Bulgaria is determined by the evolution of the traditional and the appearance of new threats to national security in the sea spaces, as new negative tendencies are being projected on them. It evolves not only from the broadened interpretation of the category defense in the Defense and Armed Forces Act, but also from the increasing expectations for the armed forces to counteract the asymmetric threats. The conduct of the present research is in connection with the new type of defensive function of a maritime state, where its military and defense, and rights and environmental protection efforts are joined, combined with a variety of services in critical situations, ensuing from the environmental and the increasing technology-generated risks at sea and on the seaside areas and reflects the significantly increased requirements from the governmental institutions for a rapid reaction in critical situations, for integrating their efforts and for studying the crises of non-military character and the risks they entail.

Notes:

¹ *C4ISR Architecture Framework*, Version 2.0 (C4ISR Architecture Working Group, December 1997).

² *DoD Architecture Framework (DoDAF), Volume I: Definitions and Guidelines*, Version 1, (Washington, DC: DoD Architecture Framework Working Group, February 2004).

³ *DoD Architecture Framework (DoDAF), Volume II: Product Descriptions*, Version 1, (Washington, DC: DoD Architecture Framework Working Group, February 2004).

⁴ *White Paper on Defence of the Republic of Bulgaria*, adopted with a decision of the Council of Ministers of the Republic of Bulgaria on April 4, 2002 (Sofia: Ministry of Defence of the

- Republic of Bulgaria, 2003), English translation is available on-line at http://www.mod.bg/white_book/ENWP.pdf (13 March 2004).
- ⁵ Velizar Shalamanov, "C4ISR in Modernizing Security Sector in Bulgaria and South-Eastern Europe," *Information & Security: An International Journal* 6 (2001): 7-22; <www.isn.ethz.ch/onlinepubli/publihouse/infosecurity/volume_6/f2/f2_index.htm> (11 March 2004).
- ⁶ Todor Tagarev, "Prerequisites and Approaches to Force Modernization in a Transition Period," *Information & Security: An International Journal* 6 (2001): 30-52; <www.isn.ethz.ch/onlinepubli/publihouse/infosecurity/volume_6/f4/f4_index.htm> (12 March 2004).
- ⁷ *C4ISR Architecture Framework; DoD Architecture Framework, Volume I: Definitions and Guidelines*.
- ⁸ CJCSI 3500.01, *Joint Training Policy of the Armed Forces* (21 November 94).
- ⁹ CJCSM 3500.04A, *Universal Joint Task List* (13 September 96).
- ¹⁰ OPNAVINST 3500.38/MCO 3500.26/USCG COMDTINST M3500.1, *Universal Naval Task List, Version 1.0* (30 September 96) <neds.nebt.daps.mil/Directives/3500/3500_38.pdf>.

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