

Methodology For Assessment of A National Security System

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Abstract— The nature of modern threats poses serious challenges to national security systems. They are forced to undergo transformations with high intensity and structural impact in order to adapt to the security environment. The iterative nature of the problem and the constantly changing context of its updating necessitate the study of the structural and functional integrity of national security systems. The report presents a methodology for assessing a proposed model of a national security system, in the sense of a set of management bodies and their functions. To achieve the goal, generally accepted methods of analysis were used: system analysis (structural, functional), analysis and synthesis, induction and deduction, mathematical modeling, criterial analysis and risk analysis methods. The results obtained are a summary of independently conducted expert assessments of the proposed model, based on criteria that represent the objective state of the system. They include recommendations for improving: the attainability of the goals, the adequacy of the structure and functions of the model.

Keywords—national security system; strategic assessment; evaluation methodology; formal model; governing bodies.

I. INTRODUCTION

The dynamic nature of modern threats and the deficiencies in the structure and activities of institutions of national security systems require their continuous improvement and achievement of the necessary maturity level, to adapt to the requirements of the environment.

This methodology offers a comprehensive and systematized approach to the assessment of a proposed model of a national security system, based on its in-depth study, through the application of proven, modern methods of analysis.

To achieve the scientific goal of the methodology, an analysis of the environment of the functioning of a national security system is carried out. On this basis, the system is

assessed and proposals for improvement in the proposed model are formulated.

The methodology is applicable to the assessment of a model of a national security system at a strategic level.

II. MATERIALS AND METHODS

The methodology defines the purpose, scope and necessary tools of the study. It is carried out by applying: system analysis (structural, functional), analysis and synthesis, induction and deduction, mathematical modeling, criterial analysis and risk analysis methods.

Open sources materials have been used to conduct the analysis.

The final result of the analysis is a summary of assessments of experts, applying the methodology independently of each other.

III. RESULTS AND DISCUSSION

A. Environment For the Creation of a National Security System

The creation of a national security system is carried out in the context of the real environment of the functioning of the state, which forms the general conditions for the implementation of state policies in the field. Therefore, its adequacy is determined not only by the approach to construction, the completeness and connectivity between the components, but also by the environment of functioning.

a) National security system operating environment

The operating environment of a national security system is determined by national legislation, adopted union commitments and bilateral agreements. The institutions of the national security system, as such, perform their functions in the field of security and defense policy,

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through the development of strategic, conceptual, program and planning documents, the adoption of regulatory acts, the introduction of standards, the performance of observations, the preparation of analyses and other activities specific to the respective field.

B. National Security System Assessment

The national security system consists of state bodies and structures that carry out the following types of activities: diplomatic, defense, intelligence, counterintelligence, operational-search, law enforcement and security activities [1]. Their functioning is supervised by a collective body (Council or Secretariat) with consultative and coordination functions.

a) Formal model of a national security system

For the analysis of a national security system, a Formal Model is created and criteria for evaluating its components are introduced.

The formal model of a national security system provides a description of the components of the system appropriate to the needs of the methodology and sets the framework within which the analysis is carried out.

The model describes the relationship between the bodies of a national security system and the functions for ensuring security at the national (strategic) level.

Definition 1: National Security System Formal Model (NSSFM) is called the sequentially ordered 3 components:

$$NSSFM_i = \{G_k, F_m, O_n\},$$

where: *i* is the relation number of a function to a governing body;

G_k - goal, *k* is the sequential number of the goal, *G_k* ∈ *K*, *K* is a multiplicity of goals;

F_m – governance function, *m* is the sequential number of the function, *F_m* ∈ *M*, *M* is a multiplicity of governance functions;

O_n – governing body, *n* is the sequential number of the body, *O_n* ∈ *N*, *N* *K* is a multiplicity of governing bodies.

b) Goal

The goal is “a specific desired achievement, state or reaction”. The goals are defined in the adopted national strategic documents and are included in the regulatory framework. They are achieved by the body through its assigned functions.

c) Functions

The function is “a specific, relatively distinct area of the organization’s or structural unit’s activity, involving the performance of interrelated operations” [2]. Each function should be considered as a set of activities. When an activity is part of more than one function, this activity should be distinguished as an independent function.

The functions are identified within the areas of activity imposed by the requirements for the security environment and are linked to the goal. A function can be performed by one or more bodies.

The protection of national security requires actions in 4 areas (Table 1):

1. Analysis of the specifics and dependencies in the security environment and early warning of the occurrence of risks.
2. Prevention, reduction and prevention of risks.
3. Crisis management and response.
4. Identification, designation and protection of critical infrastructure.

The identified functions are filled in as shown in Table 1.

TABLE 1 FUNCTIONS OF GOVERNING BODIES

Directions	Function		
	Governing Body 1	.....	Governing Body N
Direction 1	Function	.....	Function

	Function	.....	Function
Direction 2	Function	.....	Function

	Function	.....	Function
Direction 3	Function	.....	Function

	Function	.....	Function
Direction 4	Function	.....	Function

	Function	.....	Function

d) Governing Bodies

Governing bodies are the Head of State, the legislative body and the executive bodies. These are state structures formed according to the law with power powers granted to them in connection with the tasks they perform [3]. They are in certain relationships of dependence with other bodies.

In addition to being the object of analysis, state bodies are bearers of functions in the subject area and beneficiaries of goal setting and control [4].

Executive bodies are divided into hierarchical groups (Table 2):

1. Governing bodies of administrative structures reporting their activities to the legislative body.
2. Central executive bodies.
3. Governing bodies of specialized territorial administrations established as legal entities by an administrative act.
4. Territorial executive bodies.

The formal model of a national security system covers bodies and structures from all groups.

The identified bodies are filled in Table 2.

TABLE 2 DEFINING MULTIPLE BODIES IN GROUPS

Groups	Bodies with governing, coordination and control authorization		
Group 1	Governing body	.....	Governing body
Group 2	Governing body	.....	Governing body
Group 3	Governing body	.....	Governing body
Group 4	Governing body	.....	Governing body

The description of the organs as a component of the formal model provides their basic characteristics on the basis of which they can be evaluated.

The tabular representation of the formal model is shown in Table 3.

TABLE 3 TABULAR REPRESENTATION OF THE FORMAL MODEL OF THE NSS

№	Function	Governing body
1	2	3
I.		
Goal		
1.1.	Function	Governing body
1.2.	Function	Governing body
.....
N	Function	Governing body
2.		
Uen		
2.1.	Function	Governing body
2.2.	Function	Governing body
.....
N	Function	Governing body

C. Assessment of the National Security System Model

The assessment of the national security system is carried out separately for each of the components of its formal model, according to established criteria.

The criteria for assessing the components of the national security system model are as follows:

a) Criteria for assessing functions

The functions identified in column No. 2 of Table 3 are assessed against the goal to which they relate, according to the following criteria:

1. Criteria for achieving a goal:

- Criterion 1.1. “Availability for achievement” – assesses the availability of functions for achieving the specified goal.
- Criterion 1.2 “Relevance” – assesses the relationship of the functions to the goals of the institutions and structures of the National Security System.

The functions identified in column No. 2 of Table 3 are assessed against the bodies to which they relate, according to the following criteria:

b) Criteria for distribution by bodies:

- Criterion 2.1. “Distribution” – assesses the distribution of functions between the bodies to achieve the goal.
- Criterion 2.2. “Contradiction” – assesses the contradiction of the functions of the bodies to achieve the goal.
- Criterion 2.3. “Duplication” – assesses the duplication of the functions of the bodies to achieve the goal.

c) Criteria for assessing the bodies

The identified bodies in column No. 3 of Table 3 are assessed against the goal to which they relate, according to the following criteria:

- Criterion 2.1. “Purpose” – indicates the presence of goals of the bodies, their type and connectivity. The information it provides serves for a subsequent assessment of the relevance of the functions to the bodies.
- Criterion 2.2. “Subordination” – assesses the hierarchical arrangement of the bodies in the formal model of the SZNS to achieve the goal.
- Criterion 2.3. “Coordination” – assesses the existence and type of mechanisms for coordinating actions to achieve the goal between the bodies of the formal model of the NSS.

D. Recommendations for updating the current NSS model

In view of its improved functioning, the following groups of recommendations should be made:

a) Achievability of the goal/s

1. Recommendations on the availability of functions in relation to the goals
2. Recommendations on the relevance of functions in relation to the goals

b) Adequacy of the structure

3. Recommendations on the availability of functions in relation to the bodies
4. Recommendations on the subordination of management bodies
5. Recommendations on the coordination of management bodies.

c) Combination of functions

6. Recommendations on the contradiction of functions in relation to the bodies
7. Recommendations on the duplication of functions in relation to the bodies.

d) Additional recommendations

Recommendations for correcting discovered shortcomings in information processing that are beyond the scope of the criteria in the methodology (for example, terminological correctness, etc.) are allowed.

E. Reporting the results

The methodology involves the performance of uniform independent expert assessments, which are combined into a report. As a final assessment of each aspect, the overcoming hypotheses in the expert assessments are summarized. It is compiled in the Bottom Line Up Format format [5] and contains the following components:

- Key points (a synthesized presentation of the main points in the text, a summary of the supporting points in the analysis);
- Introduction (contains: the basis for performing the assessment, a brief description of the researched document, the purpose of the study, the method of conducting the study (methodology, number of expert assessments), presentation of the experts participating in the study and the team performing the summary in the final report);
- Exposition (follows the analysis according to the steps in the methodology);
- Conclusion (includes: the conclusions, a summary of the content of the document, presents an expanded reading of existing ideas in the text, without introducing new ones; contains a predictive element);
- References;
- Appendices (forms from the methodology to be completed in the suggested sequence).

IV. CONCLUSIONS

The methodology offers an approach for assessing a formal model of a national security system, according to established criteria. The parameters of the model are goals of the strategic management process, existing bodies and their functions - management, monitoring and control. They are assessed according to criteria affecting their structure and functionality.

The model claims to be universal and highly applicable, because it proceeds from the general principles of strategic management and represents individual units in the sense of their functions, taking into account the variable nature of their hierarchical location in the system and subordination restrictions.

For the objectivity of the analysis, the model is considered in conditions of real functioning of the state. The recommendations made allow for corrective actions

with regard to the purpose, structure and functions of the bodies, in view of their sufficiency, complementarity and degree of coordination.

The methodology is applied by independent specialists with expertise in individual subject areas. The results obtained are summarized and systematized in an expert assessment of the model of a national security system.

The methodology was tested in a report on the topic "Assessment of the National Security Protection System in the Republic of Bulgaria", presented at the International Scientific Conference of the G. S. Rakovski Military Academy on the topic "20 Years of Bulgaria in NATO and NATO in Bulgaria" [6].

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