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Variant of Organizational and Functional Adaptation Structures of a Typical Situational Centre to the Emergence of Crisis Situations

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ABSTRACT: Due to the growing number of crisis situations (CS) in the modern world, such as natural disasters, man-made accidents, pandemics, cyber-attacks, financial crises, wars, and other negative events, it is important for the state to develop and adapt the organizational and functional structures of information and analytical units, including situation centers (SC), to respond effectively to such cases, thereby ensuring the country's resilience in the face of negative circumstances. The purpose of the study is to consider and analyze a possible option for adapting the organizational and functional structure of a typical SC for more efficient functioning in the context of a CS. The research methods used in the article include content analysis, analysis, induction and hypothetical method. The article highlights the organization of information interaction between state structures during full-scale conflicts, the ways of resolving the SC in such conditions and the measures taken to respond effectively in a timely manner. Particular attention is paid to approaches to information counteraction in crisis management. The authors analyze the experience of countries around the world in establishing and operating SC and developing appropriate organizational and functional structures. Based on the results of the analysis, it is concluded that today there is a tendency to establish and operate crisis centers in countries around the world. However, it has been found that no publication pays sufficient attention to approaches to adaptation (improvement) of the structures of crisis centers to the emergence of the CS. The study is of great importance, since the proposed option of adapting the organizational and functional structure of a typical crisis center to the emergence of a CS opens up new opportunities for understanding effective methods of countering a CS and promotes the development of crisis management strategies, in particular in the context of hybrid confrontation and full-scale war.

Keywords: Public Administration, Security and Defense Sector, Hybrid Warfare, Informational Security, Crisis Situation.

I. INTRODUCTION

In his work, O. Hudyma [1] expresses the opinion that the modern world places a requirement on society and public authorities to ensure high efficiency of management in the field of national security and defense. To achieve this goal, he proposes one of the possible ways the introduction of special organizational and technical complexes into the public administration system, specifically, situation centers

(SC). This is one of the strategies that can help improve the decision-making process and ensure more effective control over the situation in the national security and defense sector.

I. Yevtushenko [2] in his work proved the importance of studying the theoretical and methodological foundations of the crisis situations (CS) that may threaten national security in order to further improve and develop appropriate response mechanisms of the components of the security and defense sector of Ukraine. In the course of the study, the author examined the nature of modern conflicts and their development at different stages. The author focuses on the most dangerous forms of political violence, such as "armed conflict", "war" and large-scale "terrorism". In addition, the scholar analyses in detail the legal documents that regulate the defining principles of the national security system.

Another researcher who supports this idea is A. Kolodka [3]. His study confirms that information is the basis for decision-making in the field of crisis management and plays an important role in ensuring the security of the state. In addition, the author believes that one of the main components of the activities of governing bodies is the organization and maintenance of important support systems. This fact leads the author to the conclusion that the implementation of methodological recommendations and scientific research provides an opportunity to gain best practices in the field of crisis management.

The research work by S.V. Bondarchuk et al. [4-5] is also noteworthy. In their study, they provide strong arguments in favor of the need to create and use special equipment for an information and analytical system that supports the decision-making process in project management. Particular emphasis is placed on the connection of this approach with the development, implementation, and maintenance of military information systems. These scientists prove that this approach helps to optimize project management and decision-making in military project management with the help of information systems. The introduction of SC for control and management of information technology projects in the Armed Forces of Ukraine opens up opportunities for improving management processes and prompt response to problems using modern technologies. It is important to note that the introduction of an appropriate SC for managing information projects in the Armed Forces of Ukraine will help to increase the efficiency of the development, implementation, and maintenance of such projects.

It is worth paying attention to the work of R. Tkachuk and O. Yevsyukov [6], who made an interesting study of crisis management of the city during martial law. As a result of the study, the researchers found that the development of local self-government in Ukraine leads to the emergence of various modern and urgent problems in various spheres of society. The study shows that municipal security is a specific area of activity aimed at ensuring the protection of a large city by implementing a set of measures to prevent various dangers and threats that may affect the life of the community and people. The researchers emphasize that today in Ukraine there is no modern planning system for responding to a CS, which would include effective interagency cooperation and coordination of the necessary measures.

By putting up a fresh strategy for modifying the functional and organizational framework of typical situation centers, this study offers an original contribution towards improving crisis responses. While earlier studies have looked at many facets of situation centers and crisis management, there is a lack of information in the literature about particular techniques for enhancing and optimizing situation center structures to deal with developing crises. In order to analyze situation center tasks and functions, determine necessary structural subdivisions, establish organizational patterns based on global best practices, formulate an adapted structure, and specify operational algorithms, a methodical, five-stage methodology is developed in this study. This study offers a useful framework for strengthening situation center skills, especially when dealing with hybrid threats and full-scale conflict. This framework can be used to improve national resilience and construct more resilient crisis management plans.

The analysis allows to conclude that none of the publications pays sufficient attention to approaches to improving the organizational and functional structures of the SC in order to adapt them to the CS. Therefore, the purpose of the study is to create a variant of improving the organizational and functional structure of a typical SC for effective response to emergencies. To address this question, the research has several key objectives:

- To analyze the tasks and functions of situation centers in crisis management and identify the core components and patterns in the organizational structures of situation centers;
- To develop a systematic approach for adapting situation center structures to better handle crisis situations;

- To propose a specific model for improving the organizational and functional structure of situation centers, using the Ministry of Defense of Ukraine as a case study.

II. LITERATURE REVIEW

M. Max [7] examines how grassroots organizations and the general public are participating in crisis response in new ways, and how this is affecting established organizational structures and practices. The author also looks at the changes that traditional organizations are going through as a result of these developments, examining opportunities, problems, and changing perspectives on crisis management in this changing environment. A. Yavuzaslan et al. [8] investigate a number of organizational operations and functions in the Turkish context. Comparing Turkey to other nations or regions, the scholars examine how cultural, social, and economic factors affect organizational behavior in Turkey. P.V. Shchypanskyi et al. [9] examine different approaches to defense planning by contrasting more conventional approaches with more recent or creative methods. The researchers talk about the difficulties and complexities that come with defense planning, like financial limitations, geopolitical unpredictability, and quickly changing security threats.

V. Franchuk et al. [10] investigate how to predict an organization's sustainability in relation to economic security. The researchers look at how companies might forecast and preserve their long-term viability while taking into account different risks and obstacles to economic security. With a focus on the context of regional economic and social growth, I.P. Petruk [11] investigates several theoretical approaches to crisis management. The author talks on how conventional crisis management ideas can be modified or rethought in order to meet the particular difficulties that different geographical areas encounter, such as recessions, natural catastrophes, changes in the population, or other unsettling occurrences.

In their study, I. Koropatnik et al. [12] investigate the distinct functions, accountabilities, and jurisdiction of the Ministry of Defense of Ukraine and military governance in times of increased security threats or hostilities. They also go over the laws, regulations, and operational modifications that are implemented in these situations. Moreover, they examine the ways in which these unique arrangements influence the processes of decision-making, the distribution of resources, and the cooperation between official and armed forces.

An examination of the elements influencing food security in Ukraine is presented by V. Lagodiienko et al. [13]. These aspects include agricultural productivity, disruptions in the supply chain, economic conditions, and geopolitical tensions. The authors evaluate the postwar developments in food security, encompassing modifications to trade patterns, adjustments to farming techniques, and adjustments to food supply chains. They also talk about possible outcomes for the food security situation in Ukraine following the battle.

O. Oscarsson [14] introduces "crisis-as-practice" as a new theoretical method to understanding crisis management. This framework highlights the relevance of ordinary, everyday actions in establishing an organization's crisis response skills. The author investigates the roles that routines, behaviors, and organizational practices play in crisis response and readiness.

III. MATERIAL AND METHOD

The subject of research in this topic is the organizational and functional structure of a typical situation center, including its components, roles, functions in normal conditions and necessary changes to adapt to the CS, as well as theoretical and practical aspects of the activities of situation centers and their organizational structure during the CS, covering various key issues.

1. DATA COLLECTION

Various sources of data were used to develop an option for adapting the organizational and functional structure of a typical situation center. These sources include scientific literature on crisis management theory, organizational structures, situation centers and CS analysis, as well as official documents and legislation related to the functioning of situation centers, orders, and instructions of the relevant government authorities. Such as: Law of Ukraine "On National Security of Ukraine" [15], Law of Ukraine

"On Defence of Ukraine" [16] and Decree of the President of Ukraine No. 260/2021 "On the Decision of the National Security and Defence Council of Ukraine of 4 June 2021 "On Improving the Network of Situation Centres and Digital Transformation of the National Security and Defence Sphere"" [17]. In order to guarantee accuracy and relevance, the sampling approach concentrated on using reliable, current sources. Peer-reviewed studies released in the last five years were given priority for the literature evaluation, with certain foundational works from older eras included for historical perspective. To ensure a thorough grasp of the present legislative framework, legal papers were chosen based on their direct relation to situation centers and crisis management in Ukraine. The statistics and reports on the CS discussed at the NATO Summit (Madrid, Spain, 28-30.06.2022) and the G7 Summit "Moving Towards a Just World" (Germany, 26-28.06.2022) were analyzed, which helped to clarify the nature and features of such events. These sources were picked because they have shaped international crisis response plans and have the ability to impact domestic policy. Case studies of situation centers in other nations (especially those with sophisticated crisis management systems) were looked at as a supplement to these sources. The comparative research facilitated the identification of innovative methods and best practices that might be tailored to the Ukrainian environment.

2. RESEARCH DESIGN

Various analytical methods were used to study the topic. The primary methods included content analysis, hypothetical scenario development, and thematic analysis.

The use of content analysis made it possible to systematize and analyze the existing scientific literature, research papers, publications, and legislative documents related to the topic of adapting the organizational and functional structure of the situation center to the CS. This method involved systematic coding and categorization of text data to identify recurring themes, trends, and gaps in existing research. The analysis of the collected information made it possible to identify trends, main approaches and gaps in this area, as well as to identify achievements and appropriate areas for further research.

The hypothetical method consisted of formulating hypotheses about possible options for adapting the organizational and functional structure of the situation center to the CS. Using this analytical approach, various scenarios and adaptation options were created that take into account the various possible impacts of the CS on the work of the center. Variables considered in these scenarios included the type and severity of crises, resource availability, communication channels, and decision-making processes. In addition, the study used general scientific methods such as analysis and induction. Using the method of analysis by topic, the study provided a detailed consideration of various possible options for adapting the organizational and functional structure of a typical situation center in view of the emergence of a CS. This method allowed identifying the optimal changes that needed to be made to the structure of the center to ensure an effective response to negative events and maintain the stability of the management system during crisis conditions.

The thematic analysis helped identify key aspects and factors that affect the functioning of the center during a CS and develop adaptation strategies to achieve more effective management of these situations. This method involved a systematic review of data to identify patterns and themes related to crisis management effectiveness. Key variables examined included organizational flexibility, information flow, decision-making speed, and inter-agency coordination. The inductive method was then applied to synthesize findings from these various analytical approaches. It helped to establish general trends and principles that will help to develop a more effective organizational and functional structure of situation centers for responding to CS. The application of these methods in the study allowed obtaining reasonable conclusions and recommendations on possible ways to improve the organizational structure of the situation center for more effective functioning in the context of a CS.

Enhancing the validity and reliability of the results was accomplished by the triangulation of data from several sources and methodologies. Through the use of this methodology, a thorough grasp of the intricate variables involved in converting situation center structures to computer-supported systems (CS) was made possible, resulting in well-founded conclusions and suggestions for enhancing organizational efficacy in crisis management scenarios.

3. CONCEPTUAL FRAMEWORK AND RESEARCH HYPOTHESES

The ideas of crisis management and organizational adaptation theory serve as the foundation for this study's conceptual framework. It makes the argument that a situation center's capacity to modify its organizational and functional structure in response to changing circumstances will determine how well it responds to crisis situations (CS). Four essential aspects of adaptation are identified by the framework: interagency collaboration, decision-making agility, information processing capacity, and structural flexibility. It is predicted that these factors will interact and affect the situation center's performance as a whole during CS. Several hypotheses were developed based on this framework:

- **H1:** Situation centers with higher structural flexibility will demonstrate more effective crisis response capabilities.

This hypothesis suggests that the ability to modify the organizational structure of a situation center in response to a crisis will lead to better outcomes in managing and resolving crisis situations. Structural flexibility refers to the ability to quickly reconfigure teams, roles, and processes as needed.

- **H2:** Enhanced information processing capacity will positively correlate with improved decision-making during CS.

This hypothesis emphasizes the importance of an advanced information-processing system that can handle large amounts of data efficiently, leading to quicker and more accurate decision-making in emergencies. This processing may involve both technological capabilities and human analytical skills.

- **H3:** Greater decision-making agility in situation centers will lead to faster and more appropriate responses to evolving crises.

The third hypothesis relates to the speed and adaptability of decision-making processes in response to the dynamic nature of crises, where quicker decisions can mitigate the severity of the situation. Decision-making agility likely involves both organizational processes and individual/team capabilities.

IV. RESULTS

Since the outbreak of the Russian-Ukrainian war, the overall international security situation has become more complex. According to the United States Agency for International Development (USAID), the consequences of Russia's conflict in Ukraine are comparable to those of World War II [18]. According to international experts' reports and analysis by the International Monetary Fund (IMF), the global consequences of the Russian-Ukrainian war are manifested in the following aspects: an increase in refugee migration, where about 6.8 million people have left Ukraine in search of safety; a threat to food security due to Ukraine's important role as a food supplier in the world [14]. Prior to the war, the country was one of the leading producers of sunflower oil, corn and wheat, providing a significant share of the world's supply; threat to energy stability due to Russia's dominant position as an exporter of natural gas, crude oil and coal. Prior to the conflict, three-quarters of Russia's gas and a significant portion of its oil was supplied to Europe, playing an important role in meeting its energy needs; increased inflationary pressures on the global economy, with global inflation more than doubling, reaching record levels in some regions, including the Eurozone. To date, the conflict has halted the production of Ukrainian neon, which is a necessary element for chip manufacturing, and this may cause a shortage of neon on the global market. Such a shortage would have a serious impact on the production of cars and appliances for which semiconductors are a critical component. In addition, the limited supply of Ukrainian cables and cable harnesses has also led to the temporary shutdown of some car plants in the EU. These developments could have a significant impact on the geopolitical and economic situation in Ukraine and lead to a revision of economic interests and interconnections between regions.

In 2022, a number of summits were held to discuss these issues and find ways to address them, including The NATO Summit in Madrid, Spain, from 28 to 30 June 2022. During this summit, NATO leaders agreed on a radical change in NATO's deterrence and defense posture. Decisions were taken to strengthen forward defense, increase the number of battlegroups in the eastern part of the Alliance and increase the number of high-readiness forces to more than 300,000. At the NATO Summit, leaders approved the Alliance's new Strategic Concept and a plan for action in a more dangerous and competitive world. This document outlines NATO's approach to responding to threats from Russia and other factors,

including terrorism, cyber and hybrid threats [19]. The G7 Summit "Moving Towards a Just World" was also held in Germany from 26 to 28 June 2022. Its key conclusions include:

- Support for Ukraine;
- Establishing an open and functioning Climate Club by the end of 2022 as a global response to the climate crisis; fighting hunger;
- Ensuring energy supply; developing global partnerships in infrastructure and investment;
- Strengthening the global healthcare system.

This raises the question of the need to find ways to adapt or improve crisis response systems, as well as the possibility of creating new crisis response systems in view of the emergence of the CS. Adaptation or improvement of crisis response systems means optimization of these systems for specific disasters in order to ensure timely response to disasters and prevent their occurrence or reduce the consequences they may have. A CS is a situation characterized by extreme aggravation of contradictions, serious destabilization in any sphere of activity, including regions and states. It is accompanied by a significant disruption in the functioning of the main spheres of life of society and the state, which requires a set of measures to stabilize the situation and restore the quality of life of the population and the conditions of functioning of society and the state at the pre-crisis level. One of the prerequisites for the development of a CS may be the occurrence of an emergency. An effective response to a CS requires timely receipt of information by the relevant information and analytical units, as well as information and analytical support for processing this information and making the necessary management decisions.

In the EU and NATO member states, the functions of information and analytical support for making the necessary management decisions at various levels are performed by the relevant units. One of the examples of such units is the SC. Global trends observed in recent years point to the need to create additional structures alongside existing situation centers and other information and analytical units in the face of the growing number of CS [20]. In this context, there is a pressing issue of streamlining the mechanisms for responding to CS by adapting (improving) the organizational and functional structures (OFS) of a typical situation center to new crisis challenges or an increased flow of CS. When establishing a SC, its purpose and tasks should first be clearly defined. In this article, the term "SC" is used to describe a special organizational and technical complex equipped with specialized hardware and software, as well as unique means of communication and information exchange. The main tasks of the SC include monitoring the situation in the areas of national security and defense, as well as organizing meetings for senior government officials and the state leadership. It also serves as a platform for the most competent experts and analysts to jointly develop and adopt key governmental decisions.

It is worth noting that some studies have proposed an approach based on the use and improvement of automated management systems (AMS) instead of improving the organizational mechanism and OFS [21]. At the same time, the creation of an automated management system is not always accompanied by an improvement of the management structure and does not take into account sufficient organizational aspects. Thus, in view of the above, the SC can be considered as a complex consisting of the following elements: OFS, decision support system, including information and communication systems, information and analytical systems and tools, a team of specialists that ensures continuous operation of the SC, including analysts, experts, technical staff to support information and telecommunication systems and other professionals. In support of the relevance of the study under consideration in this article, an example of building a crisis response system (governance bodies) in NATO can be cited [19]. NATO's crisis management organizational structure has a number of components and structures that work together to ensure efficiency and coordination in managing the CS. The main components of the organizational structure include the North Atlantic Council (NAC), NATO's highest decision-making body, which is composed of representatives of member states who hold the positions of foreign or defense ministers. The NAC provides political direction to NATO, including decision-making in the event of a CS. The next body is the Crisis Management Organization (CMO). This is the organization responsible for coordinating and executing crisis management tasks. It ensures interaction between various NATO committees and structures, including the International Staff and the International Military Staff.

Next in the organizational structure is the NATO Headquarters Situation Centre (SITCEN). This is a special center that monitors the situation and collects information from various sources. It provides analytical support and information for strategic decision-making during the CS. An equally important

body is the Euro-Atlantic Disaster Response Coordination Centre (EADRCC), which coordinates the response to emergencies and disasters that may occur within NATO. And finally, there are the Headquarters of NATO and member states. Each NATO member state has its own national crisis management structure that interacts with NATO Headquarters and executes crisis management decisions and tasks [22]. These components of the organizational structure work together to ensure effective CS management, coordination and strategic decision-making to maintain security and stability within and beyond the Alliance.

Ensuring the uninterrupted operation of the crisis management system requires the availability of qualified personnel, including analysts, experts, technical personnel to ensure the operation of information and telecommunication systems and other necessary specialists. All these components help NATO to provide an effective response and management in the conditions of CS and emergency events, which allows ensuring security and stability in the region. The purpose of CMO is to perform interrelated tasks [7]. First, support NAC consultation and decision-making during the CS. The organization provides collection and analysis of information from various sources, provides analytical support to the NATO leadership and helps in making strategic decisions in the context of the CS. Secondly, ensuring interaction between NAC committees and other NATO structures on issues of responsibility for crisis management. The organization helps ensure the effective exchange of information and coordination of actions between various NATO structures in order to respond quickly and effectively to the CS. Third, ensuring interaction between NATO headquarters and member states. The organization promotes communication and cooperation between NATO's central headquarters and representatives of member states to ensure promptness and effectiveness of crisis management in the context of aggravated situations.

National Crisis Centers in the US play an important role in coordinating and managing CS, including military, natural disasters, acts of terrorism, and other threats to national security. The US has a number of crisis centers that are responsible for various aspects of national security. One such center, the National Crisis Management Center (NCMC), is the primary center for crisis management coordination and communication between various departments and agencies in the event of an emergency. There are also specialized crisis centers responsible for specific aspects of national security, such as cybersecurity, counter-terrorism, and transportation security. These centers ensure the collection, analysis, and distribution of information for effective response to CS. The US also has a number of regional and state crisis centers that work with federal agencies and other agencies to provide coordination and cooperation in the event of CS at the local level. The overall situation with crisis centers in the US is dynamic, as they are constantly adapting to changing security and technology challenges [23]. The renewal and development of crisis centers in the USA is taking place with the aim of ensuring better interaction between agencies and rapid response to potential threats to national security.

Considering the above, the development of an approach to the adaptation of the organizational and functional structure of the SC to the emergence of the CS is relevant and important. This approach should ensure the effectiveness and efficiency of responding to various types of CS, ensuring timely strategic decision-making and minimizing the consequences of such situations. The approach includes the stages depicted in Figure 1. This adaptation cycle is an iterative process that ensures the constant readiness and adaptability of the SC to rapidly changing conditions and challenges.

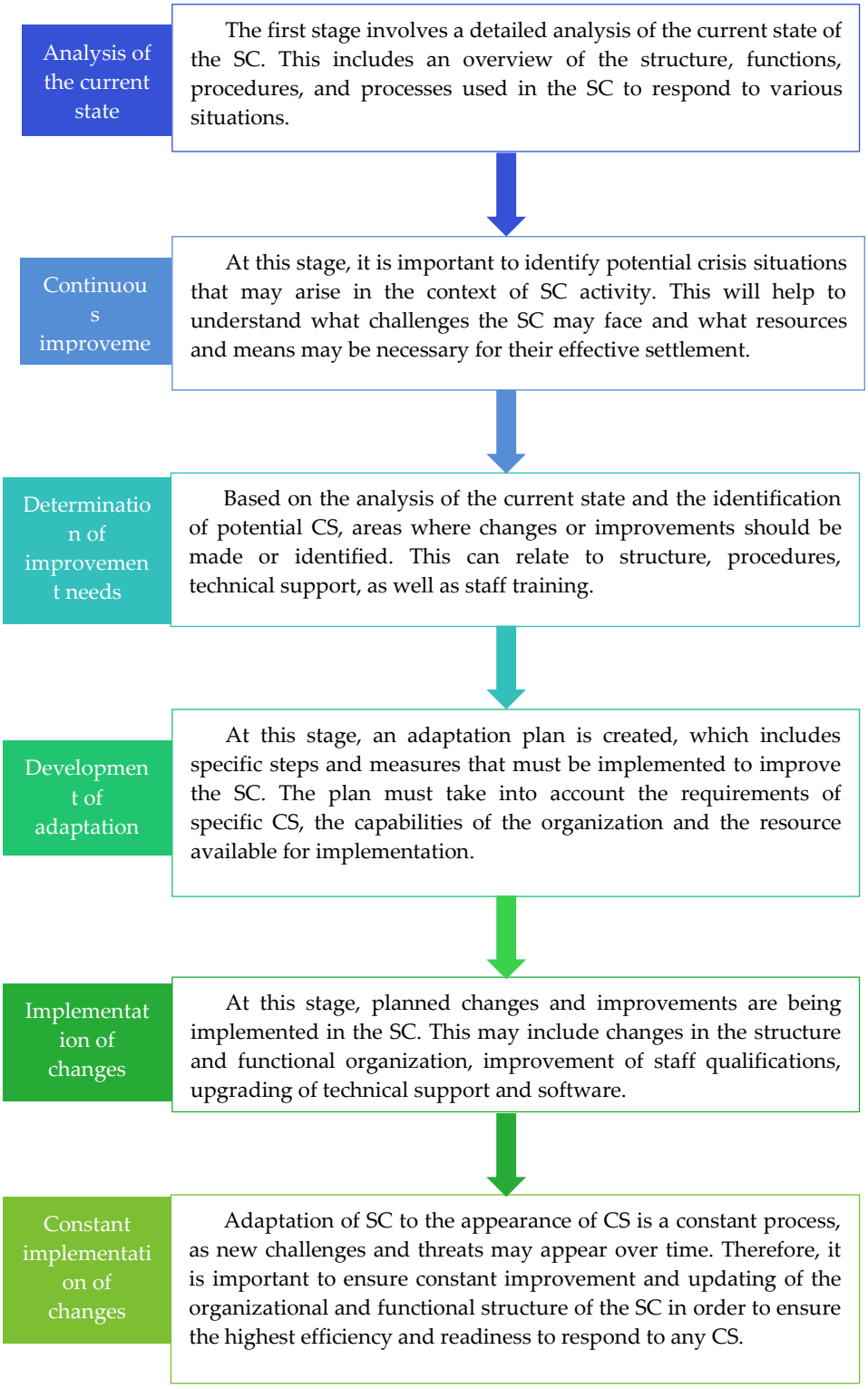

FIGURE 1. Stages of the approach to the adaptation of the organizational and functional structure of the SC to the emergence of the CS

The use of this approach can be illustrated by a specific example – the creation of the SC structure of the Ministry of Defense of Ukraine. Adaptation of the organizational and functional structure of the SC to the appearance of the CS of the Ministry of Defense of Ukraine will be carried out in five stages. The first stage will be the determination of tasks and functions of the SC of the Ministry of Defense of Ukraine. Thus, the SC of the Ministry of Defense of Ukraine will perform the following tasks [9]:

- Formation and implementation of national security policy;
- Organization of defense planning;
- Defining the principles of military policy;
- Leadership of the Armed Forces;
- Coordination of state and local bodies for defense preparation;
- Implementation of defense policy regarding airspace and sovereignty;
- Coordination of the State Special Transport Service for the functioning of transport.

Thus, the SC of the Ministry of Defense of Ukraine will play an important role in ensuring national security and effective response to the CS in the spheres of defense and military operations. One of the main functions of the SC of the Ministry of Defense of Ukraine will be to ensure coordination and cooperation with various state and military structures for the effective management of the CS and ensuring the country's national security. The following can be distinguished among the functions:

- intelligence and analytical activities for national security and defense;
- definition of strategic communications strategies;
- analysis of the military and political situation;
- planning to counter military and political risks;
- participation in the organization of liquidation of emergency situations;
- monitoring of the information environment;
- provision of information to relevant state authorities;
- cybersecurity and cyber defense;
- formation of a state defense order;
- international technical assistance in the military sphere.

The second stage is the creation of a list of structural subdivisions that must be created in accordance with the tasks and functions of the SC will be as follows:

- The information-analytical unit for providing and forecasting the development of the military-political situation – implementation of information-analytical activities and analysis of the military-political situation, forecasting, detection, determination of the level of military threats to the national security of Ukraine, planning and implementation of measures to counteract and neutralize military-political risks, to the liquidation of the consequences of emergency situations;
- Unit for responding to threats in cyberspace – ensuring constant monitoring of the information environment and information security, cybersecurity and cyber protection;
- The unit for responding to threats in the field of strategic communications – ensuring the functioning of the strategic communications system in the Ministry of Defense of Ukraine and the Armed Forces, as a component of the national strategic communications system;
- The division of the state defense order – ensuring the execution of the state defense order and receiving international technical assistance in the military sphere.

The third stage can be the identification of regularities in the construction of the OFS of the SC, in accordance with the analysis of the experience of the creation of the SC in the leading countries and organizations of the world (USA, Canada, Germany, Great Britain, France, Sweden, the Czech Republic, China, Singapore, Brazil, the Republic of Poland, Slovakia, Finland, Georgia, Kazakhstan, NATO, EU, UN, OSCE). On the basis of the received information, using the methods of analysis, decomposition and synthesis, a generalized structure of SC of the world countries was developed (the core of the organizational structure of SC) [24]. The core of the organizational structure of the SC consists of key functional units and subdivisions that ensure its effective operation in the conditions of the SC (Figure 2).

FIGURE 2. The core of the organizational structure of the SC.

The central element of the core is the SC leadership, which is responsible for making strategic decisions and coordinating activities during the CS. The effectiveness of responding to crises and ensuring the ability to respond quickly depends on this unit. The information and analytical unit are responsible for the collection, analysis, and processing of information from various sources. It provides the supply of operational and analytical data to management for decision-making based on objective information sources. An important component for ensuring communication with other bodies, departments and government structures involved in crisis response is the communication unit. It ensures effective exchange of information, coordination of activities and communication with the public. The technical unit includes information and communication infrastructure, computers, software, video and audio equipment, which ensure the collection, processing, and distribution of information in the SC. The expert and analytical unit consists of experts and analysts who analyses the situation, forecast the development of events and recommend optimal courses of action to solve the CS [25]. Units for interaction with state structures ensure the coordination of SC activities with other ministries, departments and services that also participate in solving the CS. In general, the core of the organizational structure of the SC contains functional blocks that work interacting with each other, ensuring the effective operation of the center and response to various SC. If necessary, additional subdivisions and functional units corresponding to the specifics of a particular organization and its needs can be added to the core.

The fourth stage is the formation of the structure of the SC of the Ministry of Defense of Ukraine, based on the above, using the methods of analogy and synthesis. According to the proposed prospective structure of the SC, the previously mentioned organizational structure will exist as a permanent component. The SC of the Ministry of Defense of Ukraine will have the following divisions:

- Unit and forecasting of the military-political situation;
- The CS response unit in the field of strategic communications;
- CS response unit in cyberspace;
- Unit of the state defense order.

In addition, it should be noted that the variable component will be formed directly depending on the functions (key functions) of the SC and will take into account the interests of the management body, which will ensure the functioning of the SC [26-28]. In the case of changes in external factors, the structure of the

list of key functions of the SC will also change in accordance with the established indicators, which will contribute to a more effective response to the CS.

The fifth stage is the determination of the algorithm of the operation of the SC. The situational center should function in several modes depending on the current situation and the tasks it solves. The main modes of operation of the SC may include the following elements (components):

- monitoring and information collection;
- analysis and evaluation;
- communication and coordination;
- planning and decision-making;
- crisis mode;
- training and learning.

Monitoring and collection of information consists in the fact that in this mode, the SC performs the function of constant monitoring and collection of information from various sources. It receives and processes data from satellites, sensors, mass information sources, intelligence services. This information helps to analyze the situation and draw appropriate conclusions. Next, the SC analyses and evaluates the received information in order to understand the situation, identify potential threats and risks, as well as possible ways of responding. The next action is communication and coordination, and it consists in the fact that SC is used to ensure effective communication between different structures, teams, or organizations [29; 30]. It coordinates actions and cooperation between different groups in order to solve the CS. In addition, it is worth considering that the SC serves as a place for planning actions, developing strategies and making decisions based on the analysis and evaluation of information. In the event of a CS, the SC goes into a crisis mode of operation, where it focuses on immediate actions to solve problems and manages the response to the CS [8; 31; 32]. It is also worth emphasizing that the SC is used for training, training and simulations, which help personnel acquire skills and experience in working with various situations.

These elements (components) of SC functioning regimes (in terms of content, sequence, duration) may change depending on the specifics of the activity and current circumstances. Thus, according to the results of the research presented in the article: a variant of adaptation (improvement) of the OFS of a typical SC before the appearance of CS has been developed; an algorithm for adaptation (improvement) of the SC structure to the CS was formed; for example, the structure of the SC of the Ministry of Defense of Ukraine was formed.

V. DISCUSSION

In this study, the option of adapting the organizational and functional structure of a typical SC was considered. The results of the analysis showed that changes in the modern world, including global threats and CS, require improvement and adaptation of the SC to ensure national security and effective management of CS. So, as it was mentioned, the situational centre is a modern form of organization of analytical activity, which is based on the integration of information and communication technologies and means for storing and displaying information. When considering this issue, it is worth paying attention to the work of B.A. Olaniran and J.C. Scholl [22], in which scholars point out that a major mistake in crisis management, often made in public and private organizations, is the emphasis on crisis response over preparedness and contingency planning. Preparation for and management of CS includes problem management. This means identifying complex problems that may affect an organization or community and finding ways to solve those problems before they become a crisis. At the same time, it should be noted that limiting only the strengthening of civil preparedness and crisis management, in particular in the field of critical infrastructure security, is not sufficient [10]. Ensuring national stability requires the implementation of a comprehensive approach that takes into account various spheres and directions of activity. Such an approach may include [12, 33-35]:

- improving the country's military readiness and defence capability;
- development of effective systems of control and management of the CS;
- ensuring cybersecurity and information security;
- involving the public in supporting sustainability and security;
- development of sustainable economic and social structures;

- raising the level of education and cultural awareness of the population;
- support and development of internal stability and democracy.

Such a comprehensive approach will ensure a more effective level of the country's resilience in the rapidly changing security environment. However, it is important to take into account the opinion of scientist M. Max [7], who believes that the introduction of digital technologies and the growing trend towards short-term and project-oriented social interaction have significantly affected traditional methods of crisis management. This change in society has fostered a new type of volunteer who takes advantage of readily available opportunities for self-organization and support. Traditional institutions such as the German Red Cross are faced with the challenge of adapting to these rapid changes in their organizational culture due to a new phenomenon called "unassociated volunteers" [36]. This means that standard procedures and approaches used under normal conditions may not be effective during CS.

Taking this into account, it is necessary to agree with the author's statement, since the adaptation of the organizational and functional structure of a typical situational centre to the emergence of a CS becomes particularly important. The CS response system must be flexible and adapted to various scenarios that may arise in emergency situations. In addition, it is necessary to focus on the development of mechanisms that allow timely identification and analysis of external and internal threats to the system, as well as to develop effective strategies for responding to them [37, 38]. At the stage of the crisis, it is important to respond promptly and in a coordinated manner, using all available resources and competencies. It should also be taken into account that CS can arise in different spheres of activity, therefore it is necessary to ensure interaction between various units and services within the framework of the situational centre, as well as with other state structures [13, 39]. All this emphasizes the importance of constantly updating and improving the structure of the situation centre in order to meet the challenges of modern CS and ensure an effective response to any emergency.

At the same time, S. van den Oord et al. [21] emphasize that a major mistake in crisis management, often made in public and private organizations, is the emphasis on crisis response over preparedness and planning to deal with unforeseen situations. Preparation for and management of CS includes problem management. This means identifying complex problems that may affect an organization or community and finding ways to solve those problems before they become a crisis. It is worth agreeing with the opinion of the authors, since crisis management should be more preventive and strategic, and not only reactive. Identifying complex problems and solving them in the early stages can help avoid the development of CS. This approach can provide more peace of mind and control in managing situations that can quickly deteriorate.

The research by L. Moerschell and S.S. Novak [24] is interesting. In their work, they explore the unique challenges of leadership in planning and coordinating communications and activities before, during, and after crises. Consequences of non-alignment include loss of control over messages, the spread of rumours, prolonged disruptions and the potential for reputational damage. It is necessary to agree with the opinion of the authors, since the anti-crisis communication strategy helps to convey to the public true and objective information about the CS, clarify the measures taken and their purpose, as well as maintain public trust in the government and state institutions. Preventing negative effects on the state's reputation is critical, as public trust and support is an important factor in the stability and legitimacy of government. Taking into account the aspect of communication in the management of CS is necessary, because effective communication can provide a balanced approach to solving problems and help avoid panic, mistrust, and manipulation of information [40]. This approach helps ensure stability and strengthen the role of the state in the face of crisis challenges.

Group of scientists V. November et al. [41] concluded in their work that the "continuum concept" is consistent with the paradigm shift at the end of the 20th century from crisis management to risk management, which was accelerated by numerous global catastrophic events. Scholars highlight how catastrophic events such as Hurricane Katrina and Storm Xynthia have influenced global risk perception and the need for integrated approaches in crisis management. The authors suggest that to address these challenges, it is important to consider the "prediction/decision-making" pair as a continuum, by integrating "planning" as a necessary element of the crisis centre. Such an approach is especially important in the case of cross-border crises, where multi-faceted and multifunctional thinking is needed to create a common culture of foresight that overcomes the fragmentation of the "foreseeing/decision-making" pair.

Scientist C. Baciu [23] examines in his article how NATO interacted during the COVID-19 crisis, the study found that NATO during the pandemic focused on ensuring the continuity of current operational missions and undertook additional operational measures, such as the transportation of critical medical equipment. The organization's strategic approach to crisis management during the pandemic included seven key components: activism; constant analysis and forward planning; strengthening activity and efficiency, providing assistance "on request"; taking into account lessons learned; readiness for change; showing solidarity; and strengthening cooperation between civil and military structures [42]. It is worth noting that future research on the adaptation of situation centres in crisis situations should consider the importance of distinguishing between their ongoing operational tasks and operational actions during emergency circumstances.

Also, it is worth paying attention to the work of O. Oscarsson [14]. In his article, the author discusses the importance of a practical approach to the study of crisis management, which complements the usual aspects of events and processes, and proposes the concept of "crisis as practice". The scientist I.P. Petruk [11] notes that this approach allows expanding the understanding of crisis management by highlighting common practices related to crisis management. It helps to see crisis management as a distributed practice that occurs according to the normal logic of the organization's daily activities [43]. Therefore, it is possible to draw an interim conclusion that scientists believe that crisis centres in NATO play a key role in coordinating and responding to CS that may arise in different regions of the world.

The results of this study have important implications for situation centres' operation and design in dynamic crisis situations. The suggested adaption model provides a thorough framework for enhancing crisis response capabilities by placing an emphasis on structural flexibility, improved information processing, decision-making agility, and inter-agency cooperation. These findings argue that more flexible organisational structures that can be quickly reconfigured are necessary to handle complex, dynamic crises rather than the traditional, inflexible ones. The study emphasises how important it is to fund cutting-edge programmes and technology in order to improve one's capacity for information processing and decision-making. The relevance of a comprehensive strategy to crisis management is shown by the synergistic effect of combining multiple adaptive characteristics that has been observed. Although the case study of the Ukrainian Ministry of Defence shows how the model may be applied in real-world scenarios, especially when dealing with complex geopolitical issues and hybrid warfare, it also highlights implementation issues such institutional resistance and budget limitations. Policymakers and crisis management experts can increase resilience and effectiveness in an increasingly unpredictable global environment by reevaluating and improving situation centre architecture and protocols with the help of these insightful findings.

VI. CONCLUSION

So, it can be concluded that Ukraine, like any country, faces various threats and CS, such as natural disasters, man-made accidents, terrorist threats, conflicts, and today a full-scale war against Ukraine, its borders and citizens. For effective management and response to such events, it is important to adapt the organizational and functional structure of the situation center to the CS, especially during martial law. Adaptation of the organizational and functional structure of the situational center in Ukraine should ensure rapid exchange of information between various bodies and services, effective data analysis and decision-making, coordination with other structures and state administration bodies. Taking into account the peculiarities of Ukraine, adaptation options may include improvement of technical equipment, development of information and analytical systems, training and training of specialists in the management of the CS. It is also important to ensure interaction with the public and representatives of various industries, which can help in the implementation of anti-crisis measures and contribute to the flexibility and speed of response to the CS.

The application of appropriate approaches to the adaptation of the organizational and functional structure of the situation center to the CS can help ensure the effective ability of the state and society to effectively resist any threats, regardless of their origin and nature, adapt to changes in the security environment, ensure stable functioning and quickly restore balance after CS. Strategic decisions in the field of security and defense of the state provide for the creation of a response system to threats to national

security. The concepts of "national security" and "national interests" interact in the Law of Ukraine "On National Security of Ukraine", which makes it possible to highlight important aspects of the country's security and defense activities. Ensuring national security is recognized as the main obligation of the modern state.

In order to ensure national stability and effective crisis management, it would be expedient for the relevant state authorities to pay special attention to the organizational and functional structure of situation centers. Adaptation of such structures to the appearance of the CS is an important task for ensuring response to threats to national security. In this context, defining the tasks and functions of the situational center requires a detailed analysis of potential CS that may occur in the state. This research contributed to determining the necessary resources and means for effective crisis response. It is necessary to take into account that the conditions and factors of the external environment can change, therefore the adaptation of the organizational and functional structure must be flexible and take into account new challenges and threats. Ensuring information security, cybersecurity and cyber protection are also extremely important tasks in the adaptation of the situation center to the CS, since modern crises can also be cyber in nature.

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