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**PROSPECTIVE OF ROMANIA’S NATIONAL STRATEGY
FOR THE PROTECTION OF CRITICAL
INFRASTRUCTURES**

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Abstract: In an interlocked world, the protection of critical infrastructures is part of the joint effort to ensure security. As a responsible actor on the international stage, Romania is well aware that protecting national vital infrastructures is necessary for consolidating national and regional security. The present paper wishes to analyze the existing legislative and institutional framework for ensuring the security of national infrastructures in Romania, as well as to discuss potential opportunities for future development. The paper tries to offer a definition of national critical infrastructure that is in accordance with the European interpretation of the term. Subsequently, the perspectives of future legislative initiative concerning the protection of national critical infrastructures proposed will have to comply with European developments in this domain, as a strategic approach on the national level cannot be conceived without an outlook on the existing European legislative and institutional framework.

Key words: critical infrastructures, protection, national strategy, security, defense

1.Introduction

The importance of critical infrastructures for national security and the complex nature of ensuring its protection have sprung the necessity of harmonizing national strategies to regional and global initiatives. The existing links between various critical infrastructure systems form an essential part of the very fabric of contemporary society, as they tie together national security and durable socio-economic development. The important role played by infrastructure systems in promoting national interests can no longer be overlooked.

The present configuration of the international arena poses multiple dilemmas for security analysts. The threats to and vulnerabilities of critical infrastructure systems have multiplied and diversified, partly because of the complexity of a global market, and partly because of the interconnection of vital infrastructure components. Unforeseen events, such as terrorist attacks, natural disasters, technological accidents and others have emphasized the some of the main risks to which national critical infrastructures are exposed.

As a result of recent shifts that took place on the international level, EU Member States took steps to establish a common action path for ensuring the security of their strategic objectives, embracing the idea that the protection of critical infrastructures is no longer an exclusive attribute of the states and that it requires an integrated, regional approach.

It is important to mention, at this point in our introduction, that the term of „critical infrastructures” has several interpretations. In the present paper, by „critical infrastructures” we mean dynamic, distributed, large scale systems, with an uneven

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behavior, that are interconnected, are capable of generating risks and are susceptible to multiple threats. The concept thus comprises material resources, services, IT&C activities and networks, as well as other physical and virtual components whose deterioration or destruction would have an overwhelming impact on the health, safety, security and welfare of citizens or on the good governance of state authorities.

2. Defining Critical Infrastructures in an European Context

The European Union defines critical infrastructures as those vital elements that hold a crucial importance to the Community and whose damage or destruction would seriously affect two or more Member States [1]. As it can easily be observed, European critical infrastructures are interconnected networks and systems that produce cross border effects on one or more states. The interdependence of vital infrastructures at a regional level makes the principle of sovereignty seem somewhat obsolete and increases systemic vulnerabilities. The complex connections between different national infrastructures, with various degrees of performance, make it difficult for states to ensure their efficient protection, in the absence of unitary regulations.

The European interpretation of the concept holds that critical infrastructures consist of physical and IT&C installation, networks, services and other actives whose damage or destruction can provoke serious health, security or welfare incidents both to European citizens and to Member States' governments [2]. The European Commission's classifications and criteria include amongst European critical infrastructures the following: energy networks and installations for energy production, storage, transportation and distribution (gas, oil and electricity); information technology and communication systems (telecommunications, radio, IT systems and software); the financial and banking system (capital markets, stock exchanges and the investments sector); the agricultural and food sectors; water treatment, water storage and water distribution networks; transportation networks; facilities and equipment used for the production, storage, transportation and destruction of hazardous materials (chemical, biological, radiological and nuclear substances); and last, but not least, the public administration sector.

According to some authors, the European take on critical infrastructure protection concentrates on the analysis of the "technological factor", as the criticality level of each infrastructural component is determined by analyzing the relationship between risk/threat probability and potential damage impact and by taking into account the interdependencies established between various critical sectors [3]. It is precisely these interdependencies, alongside the pronounced extra-territorial character (in relation to the notion of national critical infrastructure), that generate a series of distinct characteristics of European critical infrastructures.

Firstly, most critical infrastructural elements in the EU are the property of private entities or are privately operated, which implies sharing responsibilities between three levels of command and control: the community level, the state or national level, and the private operator level. Between each of these levels there is a much felt need to develop public-private partnerships in order to implement adequate protection measures for vital infrastructures.

Secondly, due to the EU's free movement and elimination of economic boundaries policies, national infrastructures of various Member States are highly interconnected to each other, a state of fact which increased their performance and, at the same time, the overall vulnerability of European Critical infrastructure.

The economic and social discrepancies existing between Member States, the different level of adapting to the national legislation European requirements and norms, as

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well as the variations of the implementation process of established protection measures can generate additional vulnerabilities of critical infrastructure systems. For example, when analyzing a cross border network, one is forced to take into consideration the crisis response and crisis management capacities of its weakest components, which dictate the level of vulnerability of the entire system, thus affecting the security of all network users, local or remote. Moreover, it is important to bear in mind that EU Member States do not have, at the moment, the possibility to “autonomously ensure the protection of their critical infrastructure, without the regulatory action of some superstate authority” [4].

According to a relatively recent report of the *Center for European Policy Studies - CEPS*, despite EU efforts to define and organize a formal reference framework for critical infrastructure security, the measures adopted by Member States are often fragmentary and uncoordinated, which creates difficulties in implementing a unitary understanding, at EU level, of the definition and categories of infrastructures that are considered vital for the welfare of states and of the Union [5]. Moreover, it is highly probable that, in the event of new expansion waves, during the process of European integration, the number of critical infrastructures would increase. Implicitly, by interconnecting them and by multiplying interdependencies, the vulnerability level of the entire critical infrastructure system would augment.

It is important to bear in mind that the concept of critical infrastructure is dynamic and evolutionary. The European approach proposes three criteria for identifying critical infrastructure elements. These criteria are established on the basis of length or surface, seriousness, and time span, as it follows: the evaluation of the infrastructural component is made by taking into consideration the geographical area that is presumed to be affected in the event of damage or destruction, as well as the degree of potential damage (local, regional, national or international); the seriousness is calculated by evaluating the economic, political, environmental impact, and the impact on the population of a possible disturbance of the normal functioning of a vital infrastructure component; last, but not least, the time span indicated the estimative moment in which the damage or destruction of a critical infrastructure can provoke a major incident, with serious long term effects [6].

The identification process of critical infrastructures is the responsibility of EU Member States. Their task is made difficult by the complex infrastructural interdependencies, both at a European level and between EU Member States and other neighboring nations. An eloquent example in this respect is that of the gas ducts that tie Europe to the Russian Federation. Due to this state of fact, the identification, analysis, evaluation and protection processes taking place at a national level cannot be isolated from European and other regional efforts.

A fragmentary course of action and the lack of coordination in ensuring a minimal security level of national critical infrastructures can have serious long term effects, by encouraging inadequate protection measures, defective classification of technologically outdated, inefficient or underperforming sectors as being critical infrastructure, or incorrect identification of so-called vital infrastructure components. In other words, if „a single state does not fulfill its obligations to identify, on its own territory, existing critical infrastructures and to take, single handedly, bilaterally, regionally and even globally, the necessary measures to reduce their vulnerabilities, counter threats and ensure security standards, the said state's failure would impact, in one way or another, other states, the region, the continent, or even the whole world”[7]. In this context, the prospective of European critical infrastructure security largely depends on the Member States' will to extend cross border cooperation concerning their protection, on the European Union's capacity to accelerate European integration and to reduce the economic and development differences between Member States, as well as on the flexibility, adaptability, and response

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capacities of private infrastructure operators. A viable and relatively simple solution to ensuring the security of European critical infrastructures is to promote private-public partnerships and to increase the responsibility of non-state actors that operate in certain vital or critical sectors.

3. The Security of National Critical Infrastructures. Opportunities for Future Development

Romania's shift from communism to democracy and capitalism has generated a multitude of changes in the way our country approaches the issue of national security. The adaptations to a market economy as well as the adherence to the EU and to NATO have emphasized the necessity to "closely observe the vulnerabilities that might emerge, in time, during these transformation and integration processes" [8]. In order to ensure the compliance of critical infrastructure protection to the realities of the internal and international security climate, the government must constantly act to: identify and make an inventory of vital infrastructures, define risky sectors and establish specific protection, intervention and control measures, analyze intra and inter sector dependencies and reduce vulnerabilities, legislate cooperation procedures between state and private operators and administrators, disseminate relevant information concerning critical infrastructure security, implement a coherent institutional framework for ensuring the protection of vital elements. Moreover, government responsibility should and must extend to elaborating and implementing adequate measures for improving the security of European critical infrastructures.

The necessity of ensuring the protection of national critical infrastructure is an important part of the national security consolidation process. For this reason, it is included among the provisions of Romania's National Security Strategy. Chapter XI of the Strategy, concerning the development and increasing the level of protection of national infrastructure, defines the infrastructural categories that are considered vital for national security. These categories include: transportation infrastructure, especially the construction of highways, the modernization of railroad infrastructure and the traffic management network; energy infrastructure; IT&C infrastructure; the management of Romania's hydrographic potential and flood protection; the military compounds system [9]. Moreover, the Strategy reiterates the necessity of igniting an ample development process of critical infrastructures and their protection mechanisms, considering that preparing a coherent security strategy for vital infrastructure components constitutes a priority that allows the accomplishment of Romania's national security objectives

Ideally, the development process would result in the creation of efficient and highly specialized infrastructure networks that are compatible with European and Euro-Atlantic Systems. According to the Strategy, the main courses of action should consist of: the rehabilitation and modernization of existing infrastructure, the development of new infrastructure in key fields such as transportation and energy, the promotion of new technologies and the perfection of integrated computer security systems for vital sectors, the adaptation of the national crisis response mechanisms to the new types of risks and vulnerabilities, the reform and modernization of the military infrastructure, the identification of potential risks and the elaboration of probable risk maps for critical infrastructures.

To sum up, we consider that Romania's strategic objectives concerning critical infrastructure protection could be represented by: the identification and implementation of a set of general criteria concerning the inclusion of certain structures in the category of "critical infrastructures", promoting legislation for critical infrastructure security, as well

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as regulations for various risky sectors, an integrated approach of interdependencies between different vital infrastructures; a holistic approach on the matter of critical infrastructure security issues, promoting the exchange of information and expertise with others, especially other EU and NATO members, the identification and marketing of sectors, domains or initiatives that could constitute possible “export goods” for Romania in the field of critical infrastructure security, the identification and promotion of transnational infrastructure projects, as well as the improvement of the finance mechanisms for such projects, and last, but not least, promoting academic research concerning the security of national and European critical infrastructure.

3.1. Legislative Framework for National Critical Infrastructure Security. Romania's National Strategy for the Protection of Critical Infrastructures

After becoming a Member of the European Union, Romania began its journey of adopting and adapting European norms and regulations to its national legislative framework. The legal framework for the protection of national critical infrastructures was set by the Government Ordinance no. 98 from the 3rd of November 2010 concerning the identification, designation and protection of critical infrastructures. The ordinance was adopted as a result of the compulsory requirement of reflecting into national legislation the provisions of the European Council Directive 2008/114/CE concerning the identification and designation of European critical infrastructures and the evaluation of the necessity to improve their protection.

As it was to be expected, the Romanian legislation in the field of critical infrastructure security closely follows the European regulations and designates the following sectors to comprise vital infrastructure components: energy, IT&C, water supply, food, health, national security, public administration, transportation, nuclear and chemical industries, as well as the space and research industries [10]. From the sectors enumerated above, the energy and transportation sectors were nominated to use components of European critical infrastructures. But the effort to set up a legislative framework for critical infrastructure protection went beyond the compulsory requirement of the EU, it also stemmed out of the necessity to ensure an appropriate level of security of vital infrastructural components for the socio-economic development and the national security of Romania.

As a result of this necessity, shortly after the Ordinance was adopted, it became obvious that there is a stringent need to establish a strategic framework to improve the security standards of national critical infrastructures. In order to avoid institutional overlaps or potential conflicting interests that might have a negative impact on national security, a framework document was elaborated, in order to continue the efforts of taking concrete steps towards a higher degree of security and implementing measures meant to reduce the potential effects of risk factors. More precisely, the above mentioned document is the National Strategy for the Protection of Critical Infrastructures, whose necessity derived from the rapid and unpredictable changes taking place on the international arena, the complexity of systemic vulnerabilities and risks to vital infrastructures and from the transnational connections established between various critical infrastructures.

According to the Strategy, the „risks and threats to facilities that are vital for the normal functioning of society and the security of citizens have embraced new forms, know a rapid dynamics and have an increased intensity, all of which lead to the necessity of an integrated approach on the concept of *critical infrastructure*” [11]. The document also defines a number of terms that are applicable to critical infrastructure protection, on the basis on the interpretations offered by the National Doctrine of Security Information to the

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concepts of „vulnerability”, „risk factors”, „threats”, „state of peril” and „aggressions”. It is important to mention, at this point in our discussion that, apart from observing EU directives concerning the security of critical infrastructure, the National Strategy was elaborated in conformity with Romania's National Defence Strategy and with the White Chart of National Security and Defence. It is therefore, also a part of the framework for national security, creating a set of policies and courses of action for developing and completing the regulatory matrix for critical infrastructure protection at a national level.

The Strategy furthers the harmonization of internal regulations concerning critical infrastructures to the legislative initiatives of the European Union and of NATO. In order to become applicable to as many sectors as possible, the provisions are quite general, aiming to offer guidance for the continuous development of national capabilities for the security and protection of critical infrastructures. The next step would be that of implicating both responsible national authorities and private operators in the process of deepening and perfecting the structural and procedural measures for each private infrastructure sector. Then, the implementation of these measures in a coordinated action taking place a national level would represent the final stage in ensuring a higher degree of security for critical infrastructures.

The strategic objectives of creating a legal framework for the protection of national critical infrastructures might include some of the following: to ensure a unitary character to the identification, designation and protection procedures of national and European critical infrastructures; to configure and operationalize the national early warning system by integrating existing networks and other IT capabilities; correctly assessing the level of vulnerability of critical infrastructures and identifying the necessary steps for preemptive action; and last, but not least, developing cooperation in the field of critical infrastructure protection at a national, regional and international level. The national regulations that complete or clarify the provisions of the Strategy set the critical thresholds and intersectorial criteria that form the foundation of the entire identification procedure for national critical infrastructures.

In 2012, an Action Plan for implementing, monitoring and evaluating the objectives of the National Strategy for the Protection of Critical Infrastructures was approved by the Decision of the Prime Minister, and was followed, in 2013, by the elaboration of the methodological norms to elaborate, equvalate and revise the security plans of national and European critical infrastructure owners, operators and administrators. The purpose of elaborating such methodological norms is „to build a unitary conception on the manner in which to perfect the security plans for critical infrastructure operators, in accordance to the applicable legal provisions”[12].

After all these efforts, in 2014, the process of identifying and nominating national critical infrastructures seems to have come to a halt. Some of the private operators are quite dissatisfied with the lack of initiative from some of the state authorities when it comes to implementing the provisions and regulatory measures elaborated. As the regional security climate has become somewhat volatile, given the recent events in the Crimean Peninsula and in Ukraine, a part of the earlier legislative initiatives concerning the protection of national critical infrastructures should be revised and completed. Also, the process to create and implement an integrated early warning system should be accelerated. Last, but not least, the cooperation framework for countering the effects of potential threats to vital infrastructures should be clarified and implemented.

3.2 Institutional Framework for National Critical Infrastructure Protection

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According to the 2010 Government Ordinance concerning the protection of critical infrastructures, the national authorities that hold responsibilities in this respect are: the Ministry of Internal Affairs, the Ministry of the Economy, the Ministry of Transportation, the Ministry for the Information Society, the Ministry of National Defence, the Ministry for the Environment and for Climate Change, the Ministry of Agriculture and Rural Development, the Ministry of Health, the Ministry for Regional Development and Public Administration, the Ministry of Education, the Romanian Intelligence Service, The Foreign Intelligence Service, The Special Telecommunications Service, The National Sanitary Veterinary and Food Safety Authority, and the Romanian Space Agency. Existing regulations give these institutions the ability to establish sectorial criteria and critical thresholds, coordinate activities concerning the identification process for national or European critical infrastructures, advance proposals for the revision or inclusion of other vital elements, allocate financial resources and implement adequate measures for the security of critical infrastructures.

In order to efficiently coordinate institutional efforts, the government issued an ordinance that created an Inter Institutional Work Group for the protection of critical infrastructures, whose main responsibilities are: the inter sectorial evaluation of vulnerabilities, risks and threats to critical infrastructures; the issuance of argued opinions on normative bills concerning the protection and security of national critical infrastructure, the trimestral analysis of the evolution of the identification process, various proposals for the implementation and development of an early warning system, elaborating guides and procedures for ensuring the protection of critical infrastructures, and last, but not least, promoting scientific research in the field of critical infrastructure security [13].

Another institution that bears a great deal of the responsibility of ensuring the security of national critical infrastructures is the Center for Coordinating the Protection of Critical Infrastructure, that functions within the Ministry of Internal Affairs, and whose mission is to organize and manage the activities necessary for implementing European regulations (namely, the European Council's Directive 2008/114/CE). The Center's activity consists, along other tasks, of elaborating the normative framework for the protection of national critical infrastructure, coordinating the actions of other responsible public authorities, and facilitating the cooperation between the representatives of states and private operators.

The Center appears to be quite dynamic in its effort to supplement certain lacks of the legislative and institutional framework. Some private operators of critical infrastructure components have declared to be quite satisfied with their collaboration with the Center. It seems that the institution tries hard to compensate the current „freeze” in legislative action at a national level. However, in order to efficiently ensure the security of national critical infrastructures, the Center's activity must be supplemented by that of other similar institutions. Both the institutional and the legislative frameworks for critical infrastructure protection must be refined and completed, in order to support EU efforts for regional security.

4. Conclusion

Romania has adopted some legislative and structural measures in order to comply with European demands and to ensure the protection of national and European critical infrastructures. Up to a certain point, the legislative initiatives of Romanian authorities adhere to the European principles and understandings of the concept of “critical infrastructures”. Moreover, they respect the provisions of the National Security and Defence strategy.

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However, our country still faces a series of problems concerning the protection of critical infrastructures. The main challenge is to maintain these infrastructures into a state of increased performance. Also, the effort of elaborating regulations for protecting critical infrastructures should be continued. Last, but not least, an inventory of national critical infrastructures should be elaborated and disseminated. The document should be continually updated and improved, and should also include specific vulnerabilities for each critical infrastructure sector, as well as the possible cross border implications of disturbances and a set of generic defense solutions. Moreover, we deem necessary to elaborate regional and local procedures that would encourage private-public partnerships for the protection of critical infrastructures.

To conclude with, we consider that an efficient framework for critical infrastructure security should be able to ensure an adequate level of protection for each infrastructural element, to minimize as much as possible the number of critical infrastructure components that could produce major unbalances within the system, to establish certain defense and crisis/emergency response protocols aimed at maintaining the equilibrium of the infrastructure system and last but not least to be able to adapt to the ever-changing internal and international security climate.

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