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**AN OVERVIEW UPON CRITICAL INFRASTRUCTURE
PROTECTION IN ROMANIA**

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Abstract:

Critical Infrastructure Protection is an area that is very well investigated, monitored, analyzed, evaluated, predicted and improved. The main problems that Romania faces with regard to critical infrastructure are related to maintaining it in a state of excellence. The quality of critical infrastructure in Romania needs to be improved, as security, reliability, performance conditions become important in the concept of "critical infrastructure".

Key words: Critical Infrastructure, vulnerability, security, protection, threats, responsibility, activity sectors.

1. Introduction

Critical infrastructure are particularly important for any society as they provide the services necessary for the proper functioning of the state institutions and provide the necessary resources for the population and economic agents for the optimal development of the daily activities. Infrastructure have been important in all historical periods, but some have become critical over the past decades, due to their awareness of the importance of and the impact of a local, national, regional or even global structure. Measuring the impact on the number of victims, economic costs and damage to vital services highlights both the importance of infrastructure elements and their vulnerability and, implicitly, the need to protect them.

In the European Directive no. 114 of 8 December 2008 on the identification and designation of European Critical Infrastructure and assessing the need to improve their protection, critical infrastructures are defined as an element, system or component thereof that is essential to maintaining the vital functions of society, health, safety, security, social or economic well-being of persons and whose disruption or destruction would have a significant impact at national level due to the inability to maintain those functions. From the analysis of the above definition one can deduce the importance and diversity of the critical infrastructure elements as well as their complexity.

2. National and international legislative framework governing the protection of critical infrastructure

The evolution of global threats, correlated with Romania's current political-military and economic status within the North Atlantic Alliance and the European Union, has led to the translation of potential risk factors into national infrastructures that are assimilated to critical ones, especially in the context of the role played by our country in ensuring a climate of regional stability and security with an emphasis in the Black Sea basin. Thus, the perspective of potential threats has led to strategic, institutional and functional approaches in an integrated system of national critical infrastructure protection. Given the high dependence on critical infrastructure services, society has become very vulnerable.

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This vulnerability has increased not only due to external risks and threats, but also because of the interdependencies between the different infrastructures within the relevant systems, in which disturbances / interruptions can cause immense damage to the national economy. In the area of critical infrastructure protection, the efforts of the state and society must be directed mainly on two major categories of threats: terrorist and disaster / natural disasters, which have a growing impact on infrastructure considered critical.

In Romania, the designation of national / European critical infrastructure at national level, the assessment of the need to improve their protection in order to increase the capacity to ensure the stability, security and safety of economic and social systems and the protection of individuals was regulated by O.U.G. no. 98 of 3 November 2010 on the identification, designation and protection of critical infrastructure, published in the Official Monitor of Romania, no. 757 of 12 November 2010.

The adoption of the aforementioned normative act took into account the obligation to transpose until 12 January 2011 the provisions of Council Directive 2008/114 / EC of 8 December 2008 on the identification and designation of European Critical Infrastructure and the assessment of the need to improve protection and taking into account the need to adopt a set of normative acts indispensable to the implementation process of the Directive.

3. Fundamental landmarks of the protection of national critical infrastructure

In the context of climate change in recent years and the alarming increase in the threat of terrorist actions and attacks (in various forms), it was necessary to design intervention strategies and to minimize the effects of disasters.

The existence and operation of certain services - for example, telecommunication and energy networks, banking and transport systems, health services, drinking water supplies and food - are crucial to the functioning of any state. Destruction or disruption of an infrastructure that provides essential services can inter alia lead to loss of life, loss of property, collapse of public trust.

The recent events that took place in the world on actions on national interest objectives that have had an impact on economic and social life demonstrate how vulnerable are certain areas or sectors of activity that provide services essential to all areas of social life. In this context, greater attention should be paid to these areas of interest that directly target civil society, as well as national security, given the magnitude and the negative consequences that may arise from the disruption of the functioning of these fields or sectors of activity that are generically called " Critical Infrastructure ".

Critical Infrastructure is linked to everything that sustains a company's viability, starting with administration, financial and economic institutions, public services, social and health care, information communities, military and civil protection, and ending with food, water and energy reserves , transport, communications, education and research, the media.

Critical infrastructure may be affected, destroyed or interrupted by deliberate acts of terrorism, natural disasters, neglect, accidents or hackers, criminal activity, and tendentious behavior. Any destruction or manipulation of critical infrastructure should, as far as possible, be of short duration, without frequency, easy to administer, geographically isolated, and to the detriment of the welfare of states and their citizens.

3.1 Main directions of action to protect critical infrastructure

In order to achieve a truly efficient projection of critical infrastructure in Romania, it was necessary to establish several main directions of action:

1. Define the concept of "critical infrastructure" united by setting clear and coherent criteria and highlighting the specific difference with the notion of "strategic infrastructure".

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Some analysts appreciate the need to establish risk assessment indicators (by categories of factors that may lead to its deterioration - as a result of passive actions, determined purpose, or of technical or subjective events), quantification of effects (in the light of the created human / material damage and, last but not least, of the synopses induced in the economic / social activities at the zonal / regional and macroregional level, given the role and importance of the infrastructure objective within the evaluation systems) and time (the impact period in relation to needs of national interest);

2. Develop a set of documents:

- Creating guidelines or sets of rules on Critical Infrastructure Protection;
- developing a "national inventory" of critical infrastructures, by domains of activity, specific vulnerabilities, cross-border implications and generic defense solutions; developing local, regional and national specific procedures, based on public-private partnership, in the field of critical infrastructure protection;

3. Elaboration of an integrated infrastructure protection program, which will follow:

- Ensure an adequate level of security of critical infrastructure elements;
- Minimizing the number of elements that can lead to major imbalances;
- Establishing the way to react in situations of this nature;
- Maintaining equilibrium, including at macroeconomic level, by minimizing the negative impact that can be felt on markets, investment interests, etc .;

4. Strengthen cooperation between the public and private sectors and involve the latter in providing protection measures (tax incentives, specialized assistance, etc.), taking into account that the private sector has an important part of the national critical infrastructure and is the main beneficiary of services rendered by them:

5. Reconsidering the attributions and competences of some governmental institutions, from the perspective of their "connection" to the management of critical infrastructure protection;

6. Define procedures for the exchange of information on the risks and vulnerabilities that arise during the operation of critical infrastructures, among the main actors involved in the management of critical infrastructure protection at national and international level;

7. Achieving information exchanges and international experience through the creation of companies / foundations in Romania to accumulate and disseminate best practice on ensuring the continuity of Operational Critical Infrastructure.

8. Define specific procedures for early warning and intervention by correlating the existing systems at the level of various institutions and coagulating the intervention capacity, by creating mixed structures (information, military and civil) with such responsibilities.

3.2 Defined and assumed objectives related to the protection of critical infrastructure

The European Critical Infrastructure Protection Program launched in December 2006 establishes that "Critical Infrastructures refer to those objectives, networks, services, physical assets and IT that, if interrupted or destroyed, will have a serious impact on health, safety, security or economic well-being of citizens or the effective functioning of governance in the Member States".

In the literature, the phrase "Critical Infrastructure" is used for any functional economic entity that offers public utility products / goods and services that are vital to the entire society, and whose destruction, degradation or downtime results in a major impact on population and economy at national or regional level. Essentially, critical infrastructures

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"are complex network-based systems or contain such subsystems, but may also include punctual targets of national importance.

In the context in which Romania's security and economy as well as the well-being of its citizens depend on certain components of the infrastructure and the services provided by them, it is necessary to adopt a set of normative acts leading both to the decrease of the vulnerability or the risks and to the increase of the protection of the infrastructures critical.

Through O.U.G. no. 98 of 3 November 2010 on the identification, designation and protection of critical infrastructures, the following sectors have been designated as National Critical Infrastructure:

- energy;
- information and communication technology;
- water supply;
- diet;
- health;
- national security;
- administration;
- transport;
- chemical and nuclear industry;
- space and research.

Of these, the energy sector and transport sectors have been established as sectors belonging to the European Critical Infrastructure.

Critical Infrastructure Protection is all the strategies, programs and procedures for prevention, training, response and disaster recovery procedures and emergencies.

It should be noted that depending on their location, role and importance for the stability and functionality of systems, as well as for the safety and security of systems and processes, infrastructures can be common, special and critical.

Common infrastructure do not have special qualities, apart from those that justify their existence and presence in systems and processes.

Special infrastructure are, as a rule, performance infrastructures. Those that may, as a result of extension or upgrading, have an important role in the stability and security of systems, can also fall into the category of critical infrastructure.

Critical infrastructure are usually those infrastructures that depend on the stability, security and security of systems and processes. They can or can not be part of the special infrastructure category.

As a rule, especially after the terrorist attacks of September 11, 2001, infrastructures are considered or may become critical to terrorist attacks or other threats, particularly asymmetric.

This is just one aspect or criterion for identifying critical infrastructures. There are also others that keep both the stability and functionality of systems and processes and their relationship to the external environment.

Infrastructure are considered critical due to:

- unique condition within a system or process infrastructure;
- the vital importance they have as material or virtual support (network) in the functioning of systems and in the conduct of economic, social, political, informational, military processes;
- the important, irreplaceable role they play in the stability, reliability, safety, functionality, and especially in the security of systems;
- Increased vulnerability to direct threats, as well as those that target the systems they are part of;

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– special sensitivity to the variation of conditions and especially to sudden changes of the situation.

Critical infrastructure have always been the most sensitive and vulnerable domain of any system and process. Sensitivity derives from their special role in the structure, stability and operation of a system, regardless of system or process. Vulnerability is defined by the impossibility of ensuring adequate protection through the project and through the effective realization, but also by increasing the programmed pressures, directly or indirectly, intentionally or randomly on them.

Vulnerability is, in this case, directly proportional to the role played by those infrastructures.

As a result, however well protected, critical infrastructures will always have a high degree of vulnerability, as they are usually targeted when destabilizing and even destroying a system or process.

Identifying, optimizing and securing critical infrastructure is an indisputable priority for both systems and process managers and their adversaries, ie those who seek to attack, destabilize, and destroy the systems and processes involved.

Critical infrastructure are not and do not become critical, only to attacks or attacks, but also to other causes, some of which are hard to detect and analyze.

4. Decision-making structure related to critical infrastructure protection issues

At the level of the Government, under the coordination of the State Councilor appointed by the Prime Minister, the Interinstitutional Working Group on Critical Infrastructure Protection is established and functions, whose composition, attributions and way of organization are established by a Government decision.

The responsible public authorities, together with the owners / operators / administrators of the National Critical Infrastructure / European Critical Infrastructure, carry out an assessment of the risks and threats of the National Critical Infrastructure / European Critical Infrastructure sub-sectors, within one year after the designation of Critical Infrastructure Critical Infrastructure National / European Critical Infrastructure within the respective subsectors.

Responsibility for the cooperation between the responsible public authorities and the non-governmental structures rests with the Ministry of Administration and Interior through the Critical Infrastructure Protection Coordination Center, which will provide the national contact point in relation to other Member States, the European Commission, the North Atlantic Treaty Organization and other international structures, as well as the CIWIN network management at national level.

4.1 Interinstitutional Working Group on Critical Infrastructure Protection consists of experts / specialists appointed by the responsible public authorities. The working group is coordinated by a State Councilor appointed by the Prime Minister. Other experts / experts in the field of critical infrastructure from the economic, academic and non-governmental organizations may be invited to the meetings of the working group. Nomination of experts / specialists from the public authorities responsible within the working group is done by an order of their leaders.

The Working Group shall conduct its work during the monthly meetings or when the situation imposes it and has the following main attributions:

- perform cross-sectoral assessment of vulnerabilities, risks and threats to critical infrastructure;

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- analyzes and formulates points of view for the draft legislative acts in the field of critical infrastructure protection to be approved / adopted by the Government;
- analyzes the evolution of the critical infrastructure identification process on a quarterly basis and informs the Prime Minister, through the State Counselor, about the stage and the measures required to improve the activity in the field;
- analyzes and proposes measures for the implementation of an early warning system in the field of critical infrastructure and its improvement;
- develops guides/manuals of procedures and best practices in the field;
- ensure the promotion in a unitary manner of the policies in the field of professional training and scientific research specific to the field of critical infrastructure protection.

The public authorities designating representatives in the interinstitutional working group are the following:

1. Ministry of Economy, Commerce and Business Environment;
2. Ministry of Communications and Information Society;
3. Ministry of Education, Research, Youth and Sport;
4. Ministry of Health;
5. Ministry of Environment and Forests;
6. Special Telecommunications Service;
7. Foreign Intelligence Service;
8. the Romanian Intelligence Service;
9. Ministry of Agriculture and Rural Development;
10. National Sanitary Veterinary and Food Safety Authority;
11. Ministry of Administration and Interior;
12. Ministry of National Defense;
13. Ministry of Transport and Infrastructure;
14. Romanian Space Agency;
15. Ministry of Regional Development and Tourism.

4.2 Infrastructure Protection Coordination Center (CCPIC) is the functional structure within the Operational Management General Directorate that provides the permanent technical secretariat of the inter-institutional working group.

C.C.P.I.C. consists of 3 compartments:

- The Component of National and European Critical Infrastructure;
- National contact point and management section C.I.W.I.N.;
- Technical Secretariat of the Interinstitutional Working Group on Critical Infrastructures Protection.

C.C.P.I.C., as National Contact Point in relation with other Member States, the European Commission, the North Atlantic Treaty Organization and other international structures, fulfills the following tasks:

- forward to the European Commission every two years a synthesis report with general data on the types of risks, threats and vulnerabilities identified in each of the sectors where a European Critical Infrastructure has been designated within the national territory;
- shift the European Commission with yearly information on the number of infrastructures per sector that have been debated on thresholds for cross-sectoral criteria;
- Support the responsible public authorities and designated owners / operators / managers of ICN / ICE, providing them with access to information on best practices and available methods, as well as facilitating participation in coordinated actions by the

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European Commission in the field of training and exchange of information on new technical developments in PIC;

- following the process of identifying potential ECIs, informs Member States that may be significantly affected by a possible CEI with regard to its identity and the reasons for designating that infrastructure as potentially ECI;

- informs the European Commission of Romania's intention to participate in bilateral and / or multilateral discussions on this issue in order to request the Member State in whose territory the infrastructure to be designated as CEI is accepted;

- annually informs the European Commission of the number of CEIs designated per sector, as well as the number of Member States dependent on each designated ECI;

- information of the EC on the measures taken to transpose the provisions of the Directive, also transmitting the texts and the table of concordance.

CCPIC provides the permanent technical secretariat of the Interinstitutional Working Group on PIC and has the following tasks in this respect:

- ensure the convening of the members of the working group and the transmission of the agenda;

- receives and prepares the materials for the meetings of the working group and presents them to its members;

- perform the secretarial works and operations during the sessions;

- ensures the drafting of the documents of the working group to be submitted to the Prime Minister's analysis;

- disseminates the documents drawn up to all members of the working group and ensures the distribution of relevant information on critical infrastructures between the responsible public authorities;

- ensure the logistic support for the working group meetings;

- coordinates the dissemination activity of the vocational training opportunities and of the scientific research field, the security component and the protection of the critical infrastructure;

- support public authorities in charge of cooperating with partners in the private environment, academia and non-governmental organizations.

5. Conclusions

Modern society has reached a higher level of development in all fields, especially in the technological field, which gives opportunities unimaginable a few decades ago, but which at the same time, multiply vulnerabilities society, and vulnerabilities must be viewed in close correlation with the increasing, more complex, more unpredictable, and harder to control threats. The security environment, whether we speak at individual, local, regional or even global level, is deeply marked by these developments and forces us to identify protective measures to allow further development. In this context the protection of critical infrastructure, seen as any activity that aims at ensuring the functionality, continuity and integrity of critical infrastructures in order to deter, mitigate and neutralize a threat, risk or vulnerability becomes a necessity and a fundamental element for development society and to protect the population from various threats.

References:

[1] <https://www.sri.ro/upload/BrosuraProtectiaInfrastructurilorCritice.pdf> , accesat la data de 29.10.2018.

[2] <http://ccpic.mai.gov.ro/organizare.html> , accesat la data de 29.10.2018.