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## RESULTS OF PROJECT FOCUS

*Security situation in the EU, world and in each territory continuously changes with time, and therefore, it is necessary to form new safety culture taking into account actual knowledge and experiences with interdependences among the public assets leading to extreme social crises. The present findings show that for good security situation in the Europe the strategic, systemic and proactive approach is necessary to use. The paper summarizes the FOCUS project outputs derived by the Czech Technical University in Prague. It gives deficits in disasters' management and shows the procedures for overcoming them.*

**Key words:** *disaster; disaster management; security; safety; research results.*

### Introduction

Security situation in the EU, world and in each territory continuously changes with time, and therefore, it is necessary to form new safety culture taking into account actual knowledge and experiences with interdependences among the public assets leading to extreme social crises (in history e.g. great famines). With regard to the historical development there are: a lot of preventive and mitigation measures that have been applied into practice by legal rules, technical standards and norms and public instructions; response systems; and renovation ways. However, it is true that their effectiveness decreases with time because new risks emerge and territory and human vulnerabilities increase in all domains.

The present findings show that for good security situation in the Europe the strategic, systemic and proactive approach is necessary to use [1-5]. Therefore, the European Union during the 7th Framework Programme solved several projects with target to prevent unexpected situations with dangerous impact on the Europe. One of the project was „Foresight Security Scenarios: Mapping Research to a Comprehensive Approach to Exogenous EU Roles (FOCUS)” [1]. FOCUS was co-funded by the European Commission under the 7th Framework Programme, theme "security"; call FP7-SEC-2010-1, work programme topic 6.3-2 "Fore sighting the contribution of security research to meet the future EU roles". It was solved in 2011-13 by 13 partners (Sigmund Freud Private University Vienna; Ceuss | Center For European Security Studies, Austria; Atos Origin Sociedad Anonima Española, Spain; Boc Asset Management Gmbh, Austria; Institute of Information and Communication Technologies, Bulgaria; Cross-Border Research Association,

Switzerland; Ingeniera De Sistemas Para La Defensa De España Sa (Isdefe), Spain; Czech Technical University Praha, Czech Republic; Seceur Sprl, Belgium; Danube University Krems – University for Continuing Education, Austria; University Of Haifa, Israel; University of Natural Resources and Life Sciences Vienna, Austria; Instituto Nacional de Tecnica Aeroespacial (Inta), Spain; Cess Gmbh Centre for European Security Strategies, Germany); the Sigmund Freud Private University Vienna was the project leader. The FOCUS was elaborated a set of scenarios, based on IT-supported foresight, ranging from natural and man-made disasters to terrorism and malicious attacks on Europe's critical infrastructures. Along with its IT Platform, two of the project's main deliverables were the creation of a long-term prediction and assessment tool at EU level and a roadmap to plan and prioritize future Security Research objectives. The paper presents results obtained by the CVUT research [5].

### 1. Short description of approach

For investigation of disasters, types of disaster management there were used original data in archives, catalogues, databases, information systems – more than 5000 references, results of special projects, e.g. Switzerland - the PLANAT project, US – FEMA projects, Canada, the Netherlands, EMA (Australia), OCHA, the Czech Republic, IAEA, OECD, UN etc. – real references are in [1,4,5] and in materials quoted in. For obtaining the original results there were used:

– historical catalogues, databases, archives and original papers on phenomena that caused harms and losses on public assets in time period from historical time up to now, i.e. they belong to disasters; for some of them (floods, earthquakes, chemical accidents,

epizootic, epidemic, electro-energy net failure) the results obtained are very detailed;

– the different methods, from very simple method to scientific ones. The most simple had a form of a statement without giving the author and without the data used specification that was shielded by name of business firm. The second level method had a form of statement of certified company without a description of way by which the statement was performed. The next level was created by methods that consist either in the use of respondents whose qualification was not verified by standard procedures used in the EU (these were used for data collection by help of questionnaires) or in the discussion of specialists whose qualification was not verified by standard procedures used in the EU, but some of them have had publication in professional journals. The highest level of used methods was created by the pure scientific methods. To these it belongs: analysis and synthesis of published results on disasters; specific investigation of disasters by analytical and heuristic methods. Heuristic methods that are used were in the first tested on real data if they are suitable for security tasks solution; specific investigation of level of disaster management by help of special questionnaire; and specific investigation for identification of critical items in territory management from the viewpoint of human survival performed by special logical tool specially tailored for the FOCUS targets.

Detail descriptions of data and method with references are in [5].

## 2. Summary of outputs of individual studies of disasters and disaster management

The detailed study on disasters and disaster management in the EU [5] was concentrated to ten domains the outputs of which are concisely summarized in following tables. The work under account also obtains results of theoretical study dealing with the form of EU security concept: it must be based on the systemic (holistic) thinking, the typical feature of which is the focusing on the whole views at systems and on research of relations among their individual parts; proactive approach; all hazard approach; respecting the co-existence of overlapping systems. For its realisation there is necessary sophisticatedly managing the disasters that damaged the security of community and its assets, i.e. to apply measures and activities of prevention, preparedness, response and renovation. For practical purposes there are necessary good technical solutions based on recent findings and experiences and correctly aimed governance of public affairs supported by legislative with sufficient legal force, finances, qualified human personnel and material base.

The outputs for different aspects of security items:

1. Security challenges for the EU that can be considered to have big impact in the 2035 time frame and currently are not sufficiently addressed in the planning of research.

2. Most severe security challenges that should be addressed by research planning in the 2035 time frame.

3. Challenges for future security research for prevention.

4. Challenges for future security research for preparedness.

5. Challenges for future security research for response.

6. Challenges for future security research for renovation.

7. Related main vulnerabilities to be addressed for future security research.

8. Related main knowledge gaps to be addressed for future security research.

9. Proposed type of future security research.

10. Expected most needed topics of future security research.

Derived as needs for obtaining the EU capability to overcome the deficits at disasters' management from the viewpoint of safe community, separated according to disaster type, are described in the following tables 1 – 10; the details for individual disaster types are in book [5].

## 3. Results of tasks for research

Formulation of tasks for research" is based on philosophy that each responsible government must protect inhabitants daily and at critical situations, i.e. the EU must also preserve the basic functions of a state; the real tasks are given for each public protected asset separately. The basic requirement is so that the research: was targeted, i.e. the already-known was not researched without a good reason; sought and solved open problems, namely correctly with regard to current knowledge and experiences on ensuring the safe community and its sustainable development; demanded objective results under given conditions, i.e. to systematically present the results in front of a relevant expert community and to make them be a subject to a public opponent control. With this, plagiarism can be avoided, the real protection of intellectual property will be ensured and the development of creative abilities of individuals that has a creative potential and that are willing to give it in favour of the EU and its inhabitants' development will be supported; and would not distort the results – the style "the fundamental is what an authority says" holds development back. Therefore, it is necessary not to dissimulate conflicts among outcomes of projects since their existence is normal. Under the

effort of finding the right solution, it is necessary to make it a subject of a thorough investigation with aim to find the causes of problems and to define an optimal solution of them in a given conditions and within the given possibilities. The main task of the future EU security research is to create systems for knowledge-based decisions and effective utilisation of land and nature. Therefore, the EU must remove prejudice in favour of lobbying groups the interest of which is different from public interest.

### Conclusion

The main deficiencies in the EU disaster management are the following items:

- all hazard approach is not systemically applied;
- some disasters are underestimated (mainly in social domain);
- systemic, strategic and proactive management is not always implemented into practice;
- gaps in risk management, risk engineering and in trade-off with risks;
- present research does not determine priority orientations, its targets are influenced by politicians or lobbies;
- application procedures and orientation of strategies are not regularly verified;
- reasonable strategy for disaster management is missing;
- the disaster management does not often respect disaster life cycle;
- accent to problem solving is missing, still only a lot of discussions on problems;
- lack of resources;
- lack of instrument for ensuring the EU finance stability;
- lack of management supporting the public protection and sustainable development.

All the above given results agree in a statement that with regard to the horizon, which is the year 2035, it is necessary:

- to expect several new disasters since human system, i.e. both the area and the human society, develops dynamically. Research must ensure their early identification along with methods for their good governance with aim to ensure the safe EU and security for its citizens,
- to expect the growth of the vulnerability of the EU and its citizens (factors: the number of inhabitants, dependency on civilization comforts, resources exhausting, lack of water, energy, sources, environment contamination, social conflicts etc.) i.e. the size of risks of all kind will rise. Research must find a suitable management on the basis of qualified data on disasters

that must be systematically gathered and interpreted in a qualified way,

- to support the research on disasters, methods for risk management and coping with risks and all that to ensure with aim to reach an efficiency in spending the sources, i.e. both the work's intensity and the level of financial support to define as adequate to risk level for the EU and its inhabitants,

- for the EU to prepare early tools for dealing with the possible extreme situations, i.e. to target the research so that it sought the solution to problems connected with disasters on technical, operative, tactical, strategic and political level,

- not to underestimate significant facts in the EU, and therefore, the research must create a qualified strategy for the systematic, strategic and proactive management of the EU area that will be able to react to changes and that will be justified enough for the politicians to implement it in practice,

- to reduce the influence of lobbyists at the assigning of research intentions and demand the professional presentations of research results in qualified expert magazines and books,

- for the EU, to create tools for qualified management targeted on security and sustainability of both the EU and its vicinity, i.e. to correctly combine the types of management (strategic, tactic and operative) based on the qualified data, expert assessments and correct methods of deciding and to effectively use the tools of state that are: education and training of citizens; specific education of technical and management workers; technical, health, environmental, cyber and other standards, norms and prescriptions, i.e. tools for the regulation of processes that can or could lead to disaster occurrence (origin) or to intensifying their impacts; inspections; executive units for coping with emergency situations and critical situations; systems for dealing with critical situations; security, emergency and crisis planning; and specific systems of management for coping with critical up to extreme situations. Research should create the site specific systems for the decision-making support,

- to introduce in the EU the research financing so that the research results would be interconnected, based on data (i.e. not to copy scripts and other tools) but try to obtain facts for decisions,

- to concentrate the research on finding of the way of the system of systems management in the dynamically variable world because of the complex nature of a system such as the EU.

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## РЕЗУЛЬТАТЫ ПРОЕКТА FOCUS

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Ситуация в сфере безопасности в ЕС, мире и на каждой отдельной территории постоянно меняется. В связи с этим является необходимым формирование новой культуры безопасности принимая во внимание все знания и накопленный опыт, а также взаимозависимости между государственными активами ведущими к экстремальным социальным кризисам. Современные результаты показывают, что для достижения стабильной ситуации в области безопасности в Европе необходимо применять стратегические, системные и упреждающие подходы. Данная статья представляет общие результаты исследований полученных в рамках проекта FOCUS, в Чешском Техническом Университете, г. Прага. Описаны существующие недостатки в процессах управления в случае кризисных ситуаций и процедур их решения.

**Ключевые слова:** катастрофа; управление при авариях; безопасность; надежность; результаты исследований.

## РЕЗУЛЬТАТИ ПРОЕКТУ FOCUS

*Д. Прохазкова*

Ситуація у сфері безпеки в ЕС, світі та на кожній окремій території постійно змінюється. У зв'язку з цим є необхідним формування нової культури безпеки, приймаючи до уваги всі накопичені знання та досвід, а також взаємозалежності між державними активами, що можуть призвести до екстремальних соціальних криз. Дана стаття представляє загальні результати досліджень отриманих у рамках проекту FOCUS, у Чеському Технічному Університеті, м. Прага. Описані існуючі недоліки у процесах керування у випадку кризових ситуацій та процедури їх вирішення.

**Ключові слова:** катастрофа; керування під час аварій; безпека; надійність; результати досліджень.

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