

FOREWORD

Within the Romania-Bulgaria Cross-Border Cooperation Program 2007–2013, Priority Axis 2 – Environment – Sustainable use and protection of natural resources and environment and promotion of efficient risk management in the cross-border area, Key area of intervention: 2.2 – Development of the joint infrastructure and services to prevent the impact of natural and man-made crises, including joint emergency response services, during the period July 2013–July 2015, the activities foreseen within “*EMERSYS Toward an integrated, joint cross-border detection system and harmonized rapid responses procedures to chemical, biological, radiological and nuclear emergencies*” project, MIS-ETC code: 774 are implemented.

The National Institute for R&D in Physics and Nuclear Engineering – Horia Hulubei – IFIN–HH is the project leader and has as partners from Romania, the General Inspectorate for Emergencies Situations – Ministry of Internal Affairs (GIES), and, in Bulgaria, the Institute for Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences (INRNE) and Fire Safety and Civil Protection Directorate General, Ministry of Interior (DGFSCP).

EMERSYS project is financed by European Funds for Regional Development in proportion of 85% and co-financed by Governments of Romania and Bulgaria, the total value being of 6,428,807.22 euro.

General objective of the EMERSYS project: Provide authorities from the entire Romanian-Bulgarian (RO-BG) cross-border area with means for the coordinated implementation of European Community strategies and legislation, as well as of bilateral-Conventions, regarding emergency preparedness, planning and intervention in case of Chemical, Biological and Radiological/nuclear (CBRN) emergencies.

The EMERSYS project is dedicated to streamline coordination between emergency authorities from the RO-BG cross-border area in practical implementation of legal and political undertakings (*SEVESO II, ECURIE, UNECE Convention on trans boundary effects of industrial accidents*), by providing effective means for a more harmonized emergency management on the local and regional (NUTII) levels, based on a common approach, from a European perspective.

The project focuses on creation of a unitary emergency infrastructure for early detection and intervention related to chemical and nuclear facilities, as well as biological and radiological situations of major risk from the Romanian-Bulgarian cross-border area. In the event of an emergency with off-site effect, this

will enable for the rapid detection and notification of releases, the monitoring of the progression of an accident from the moment of detection, to forecasting and estimating the ongoing and the potential releases, as a function of time.

The EMERSYS project will put in place a system that joins forces, shares resources and eliminates duplication of national efforts related to CBRN events, providing thus for an economically efficient and sustainable, rapid cross-border response force, capable to react as a single unit, for the mutual benefit.

Specific objectives to be implemented:

- Enhance the technical capability for detection and notification of CBRN events with potential trans-boundary effect and implementation of a joint decision support tool (DST) at the level of all Emergency Inspectorates/Civil Protection Directorates from the entire Romanian-Bulgarian cross-border area.

- Integrate the newly created infrastructure and the existing national early-warning system and interconnect the Emergency Inspectorates/ Directorates of Civil Protection from the cross-border area by setting-up a platform for bilateral and on-line exchange of information related to hazardous materials including radioactive substances also.

- Harmonize local plans and procedures for off-site intervention in case of major chemical accidents, biological and radiological/nuclear emergencies and development of collaboration plans and protocols.

- Enhance the emergency expertise from the cross-border area by training the operational staff.

- Raise public awareness in the cross-border area related to technological risk for the population in the Romanian-Bulgarian border area.

Implementation of an adequate and well-structured system that provides reliable detection and real-time notification is of outmost significance for an effective and timely response in emergencies resulting from industrial accidents, and is a pre-requisite to further implementation of a realistic civil protection policy.

A Decision Support Tool having access to, and using in an integrated manner, data from the entire cross-border area (regardless of physical country border) serves as a powerful tool to responsible authorities for implementing countermeasures within a time compatible with that needed to protect the population. This also offers a better coherence and transparency in the decision processes on local and border-crossing interventions as one input to improving public understanding and acceptance of off-site measures.

The RO-BG cross-border area concentrates the two countries' energy production capabilities based on nuclear technology (Cernavoda and Kozloduy NPPs), as well as important activities and industrial facilities having a high potential of risk due to routine handling of dangerous substances.

The recent process of technological risk identification at the border between Romania and Bulgaria (required by the SEVESO II, Directive 96/82/EC) shows that the main hazards in the cross-border area, comes from fertilizer industry,

chemical industry, transport of dangerous substances, storing of petrochemicals, power supply and water treatment.

The necessity of implementation of core infrastructure for TIC detection in the cross-border area, resides in the requirements of fulfilling the obligation imposed by the 96/82/EC Directive (SEVESO II) and by the UNECE Convention on trans boundary effects of industrial accidents (signed by both Romania and Bulgaria).

The largest part of the funds allocated has been used for the purchase of equipment and specialized software destined to GIES from Romania and FSCPDG from Bulgaria in order to improve the technical capabilities for detection, assessment and forecasting in Chemical, Biological, Radiological and Nuclear (CBRN) emergency situations. Intervention teams for CBRN emergency situations in the counties from the Romanian-Bulgarian border shall use the same type of equipment, a joint platform for data exchange and communication shall be implemented, national plans for intervention in CBRN emergency situations shall be harmonized, as well as the coordination of their implementation. Local and national communities shall get informed periodically on the new technical, logistic and organizational capabilities in the field of intervention in case of CBRN emergency situations. The two national institutes in nuclear field from Romania and Bulgaria ensure the theoretical and practical training of GIES and FSCPDG members, prepare methodological guides and work instructions for the use of the purchased equipment. The publishing of scientific articles in the field of intervention in case of CBRN emergency situations and in related fields is another goal of EMERSYS project (for details see www.emersys.eu), as a dissemination of results from the project.

In this issue of Romanian Journal of Physics, you can find scientific articles in the field of intervention in case of CBRN emergency situations as well as from related fields.

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