Safety and Security Interfaces- addressing challenges

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Content:

EU support to Global Nuclear Security and Safety

Safety and Security Interfaces – where we stay and challenges to address

EU support to Global Nuclear Safety and Security

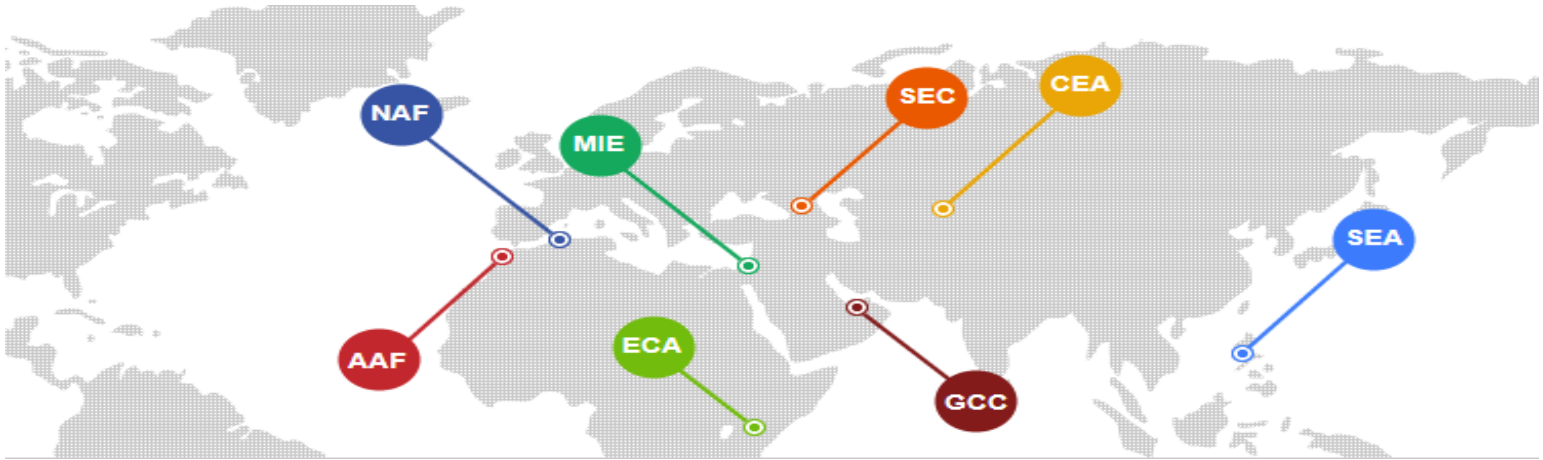
- **Instrument for Stability : 145 M € to the Regional Chemical, Biological, Radiological and Nuclear (CBRN) Centres of Excellence (CoE) initiative (2014-2019);**

- **EU Council Decisions on support to IAEA nuclear security activities : 50 M € (2009-2019);**

- **Instrument for Nuclear Safety Cooperation: 325 M € (2014 – 2020).**

- **EURATOM Research and Training programme on nuclear fission, safety and radiation protection; and nuclear security (implemented only by EC Joint Research Centre) : circa 875 M € over the period 2014-2018**

Example: EU support to Global Nuclear Security and Capacity Building under the Instrument for Stability: CBRN CoE



CBRN Centres of Excellence Initiative

62 Partner Countries, 8 regions, 66 projects

http://www.cbrn-coe.eu

EC JRC : Technical synergies between safety and security

Area	Technique	Safety	Nexus	Security
New Designs	• Evaluation methodologies and related techniques	Risk and Safety RSWG	<->	Proliferation Resistance & Physical Protection PR&PP
Emergency Response	• Radiation Monitoring Systems • 3D Laser	• Large scale major events • Urban radiation modeling	-> <-	• Smaller scale malevolent act • Design Information Verification
Measurements	• Calibration & Testing of radiation equipment • Characterizations	• Radioprotection • Source term	-> <-	• Detection of illicit trafficking • Forensic

EC JRC: New Design Concepts : Safety vs. Proliferation Resistance and Physical Protection

Generation IV Systems

- will excel in safety and reliability, will have a very low likelihood and degree of reactor core damage, and will eliminate the need for offsite emergency response;

- will increase the assurance that they are a very unattractive and the least desirable route for diversion or theft of weapons-usable materials, and provide increased physical protection against acts of terrorism."

- two "horizontal" working groups – Risk and Safety Working Group (RSWG) and Proliferation Resistance and Physical Protection Working Group (PRPP WG). JRC has represented the Euratom in both groups and contributed to the work aiming at ensuring safety and security by design.

EC JRC: Emergency response in safety and security

- The ECURIE system is the official information system of the EC that activates the state of a nuclear/radiological emergency and which obliges MSs subsequently to exchange information relevant to follow the evolution of the emergency situation and decisions/countermeasures made by the national authorities.

- EURDEP(EUropean Radiological Data Exchange Platform) now solidly anchored in the ECURIE information exchange system. EURDEP gives direct access to gamma dose-rate readings of the automatic national networks in Europe; currently 5500 stations from 35 European countries transmit their measurements in almost real-time.

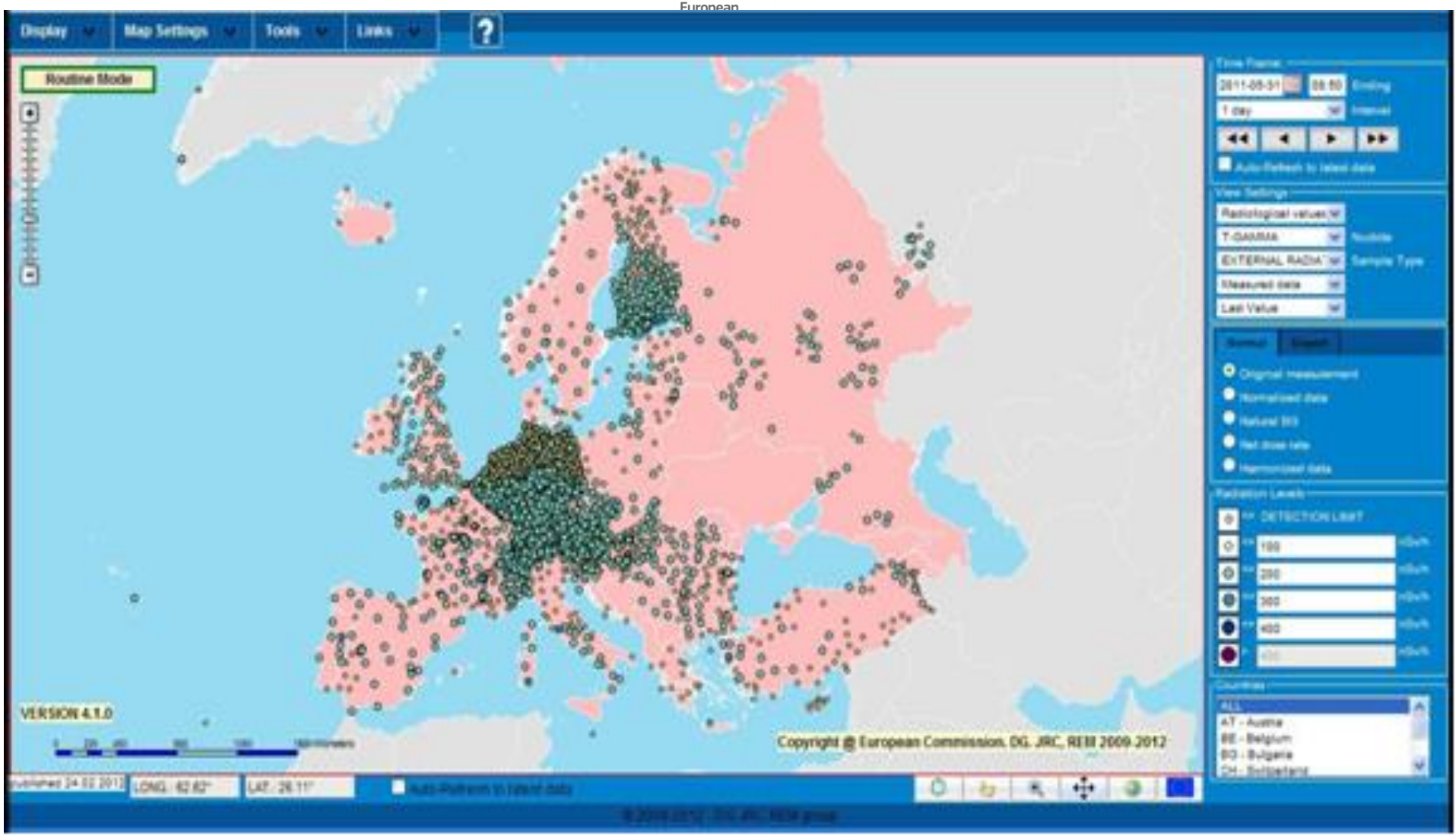


Figure 1: screenshot of the EURDEP web interface: it gives an overview of the levels of radioactivity in Europe in 5 freely definable ranges for the chosen time period and nuclide/sample type.

EC JRC: Measurement systems/detection of radioactivity and radioactive materials

- Personal Radiation Detectors are built on the same basis as hand-held dose rate meters used in radioprotection but provide different output. Such similarity between detection systems used in either field narrows down to identical systems in the case of Radiation Portal Monitors (RPMs) for trucks, containers and train wagons.

- In Europe, the EU Customs operates radiation detection portals in Mega ports that are used to prevent from illicit importation of radioactive material. These equipment's were very useful during the Fukushima event to detect contaminated containers from Japan.

Safety and Security Interfaces Challenges as seen from safety point of view (1/2)

- **Legal basis:** Different International Instruments: CNS and CPPNM; A/CPPNM
  - CNS 7th Review Meeting: Under Other issues: Several Contracting Parties reported with due consideration to enhance safety, on the evaluation and response to other issues such as cyber security threat, while recognising the distinction between nuclear safety and nuclear security.
- **Regulatory Systems:** Diverse practices- one common safety and security regulator versus two different regulators
  - Competences on Nuclear Safety and Nuclear Security
  - At EU level two associations exist : WENRA and ENSRA
  - EU Nuclear Safety Directive; WENRA Safety Reference Levels
- **IAEA Standards, Recommendations, Guidance**: Different Communities to develop IAEA documentation

Safety and Security Interfaces Challenges as seen from safety point of view (2/2)

- **Several References to safety and security interfaces in the IAEA safety related standards, however treating interfaces at rather general level**

- GSR Part 1: Requirement 12: Interfaces of safety with nuclear security and with the State system of accounting for, and control of, nuclear material: The government shall ensure that, within the governmental and legal framework, adequate infrastructural arrangements are established for interfaces of safety with arrangements for nuclear security and with the State system of accounting for, and control of, nuclear material.
- GSR Part 2: Requirement 6: Integration of the management system: The management system shall integrate its elements, including safety, health, environmental, security, quality, human-and-organizational-factor, societal and economic elements, so that safety is not compromised.
- SSR 2/1 Requirement 8: Interfaces of safety with security and safeguards: Safety measures, nuclear security measures and arrangements for the State system of accounting for, and control of, nuclear material for a nuclear power plant shall be designed and implemented in an integrated manner so that they do not compromise one another.
- SSR 2/2: Requirement 17: Consideration of objectives of nuclear security in safety programmes: The operating organization shall ensure that the implementation of safety requirements and security requirements satisfies both safety objectives and security objectives… Safety and Security measures shall be designed and implemented in such a manner that they do not compromise each other.

Addressing Safety and Security Interfaces Challenges as seen from safety point of view

- Support Implementation of Integrated Management Systems to ensure safety and security are mutually understood and reinforced;
- Develop common "safety and security" culture keeping due respect to differences, but recognizing that both safety and security measures contribute to the protection of workers, public and environment
- Continue the international efforts to bring together nuclear safety and security communities, eg. Common activities of INSAG and AdSEC on safety and security Interfaces, development of TECDOCs, etc.;
- Share practical examples, to the extent possible, on success methods or modes of dealing with interfaces;
- Support New Comers in establishment of effective systems for regulating nuclear safety and nuclear security

European Commission

THANK YOU