European Commission

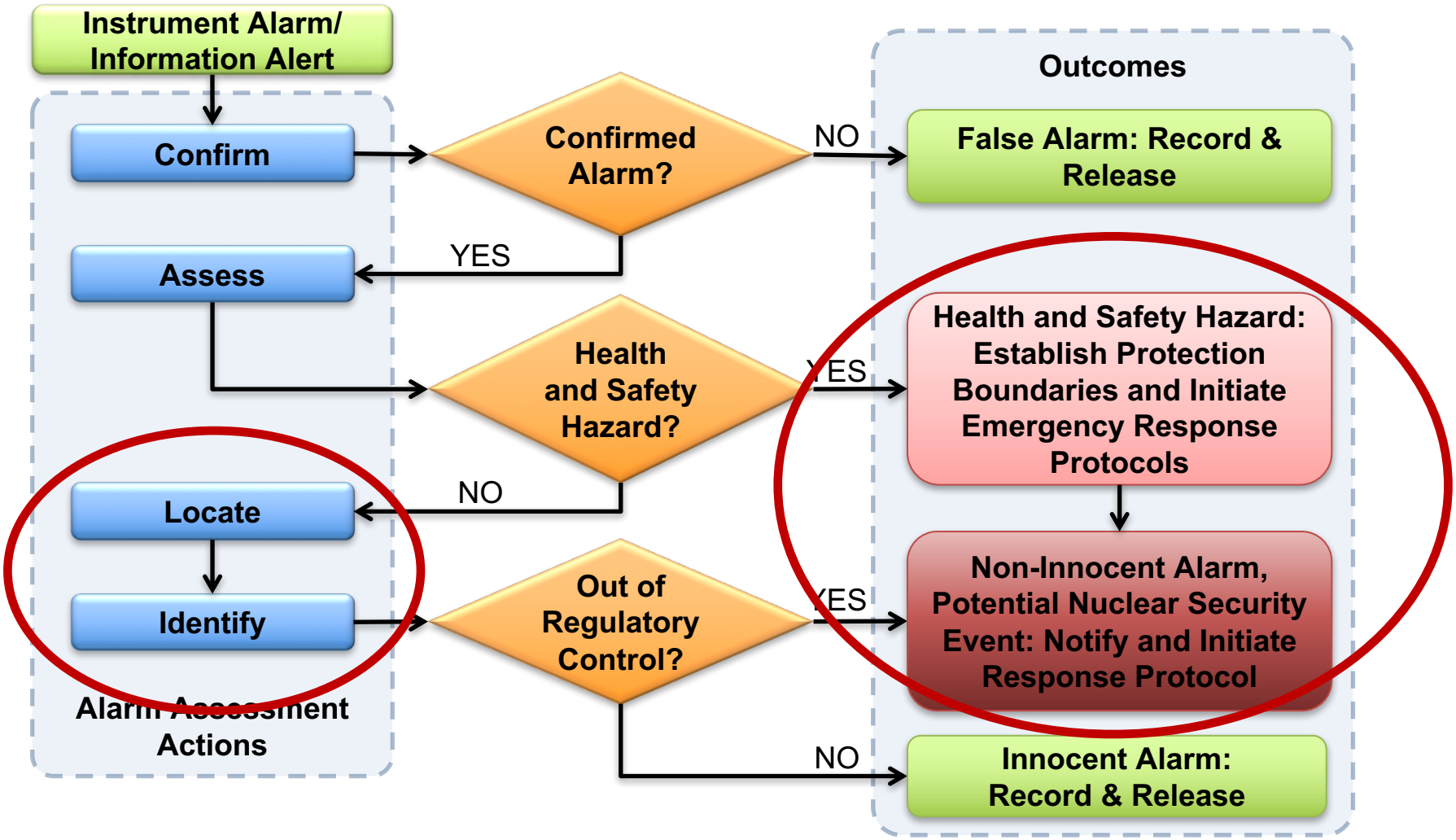
Information sharing for Technical Reachback

GICNT - Magic Maggiore Workshop
28-30th March 2017, Ispra

W. Janssens,
European Commission Joint Research Centre
Directorate G, Nuclear Safety and Security
Department G.II Nuclear Security and Safeguards

Joint Research Centre

Request for Reachback assistance



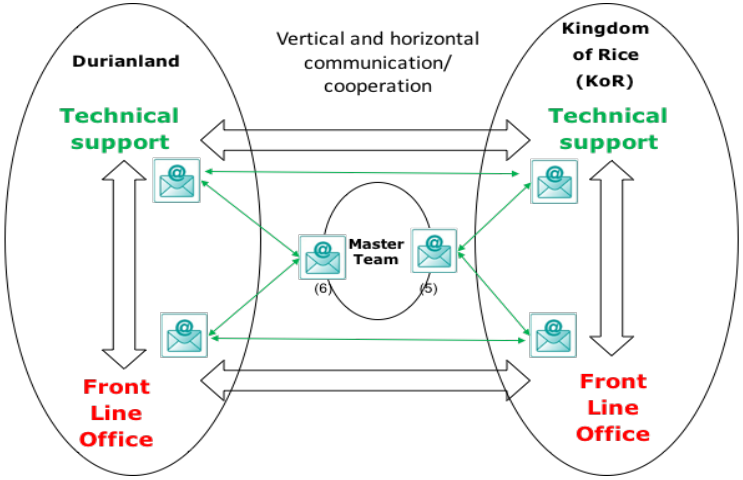
European Commission

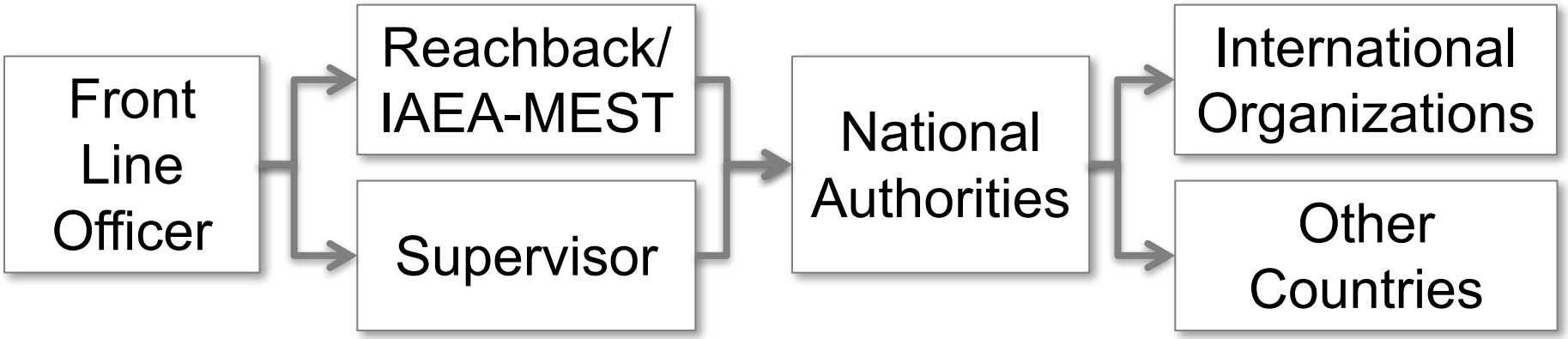
Nuclear Security Event

- FLO provides initial response
- FLO may require assistance
  - **Unclear Results of Localization/ Identification**
  - **Estimated health/ safety hazard**
  - **Confirmed material out of regulatory control**
- Communication protocols should be in place
  - **Authorities to contact**
  - **Type of information to be shared**

Authorities to contact

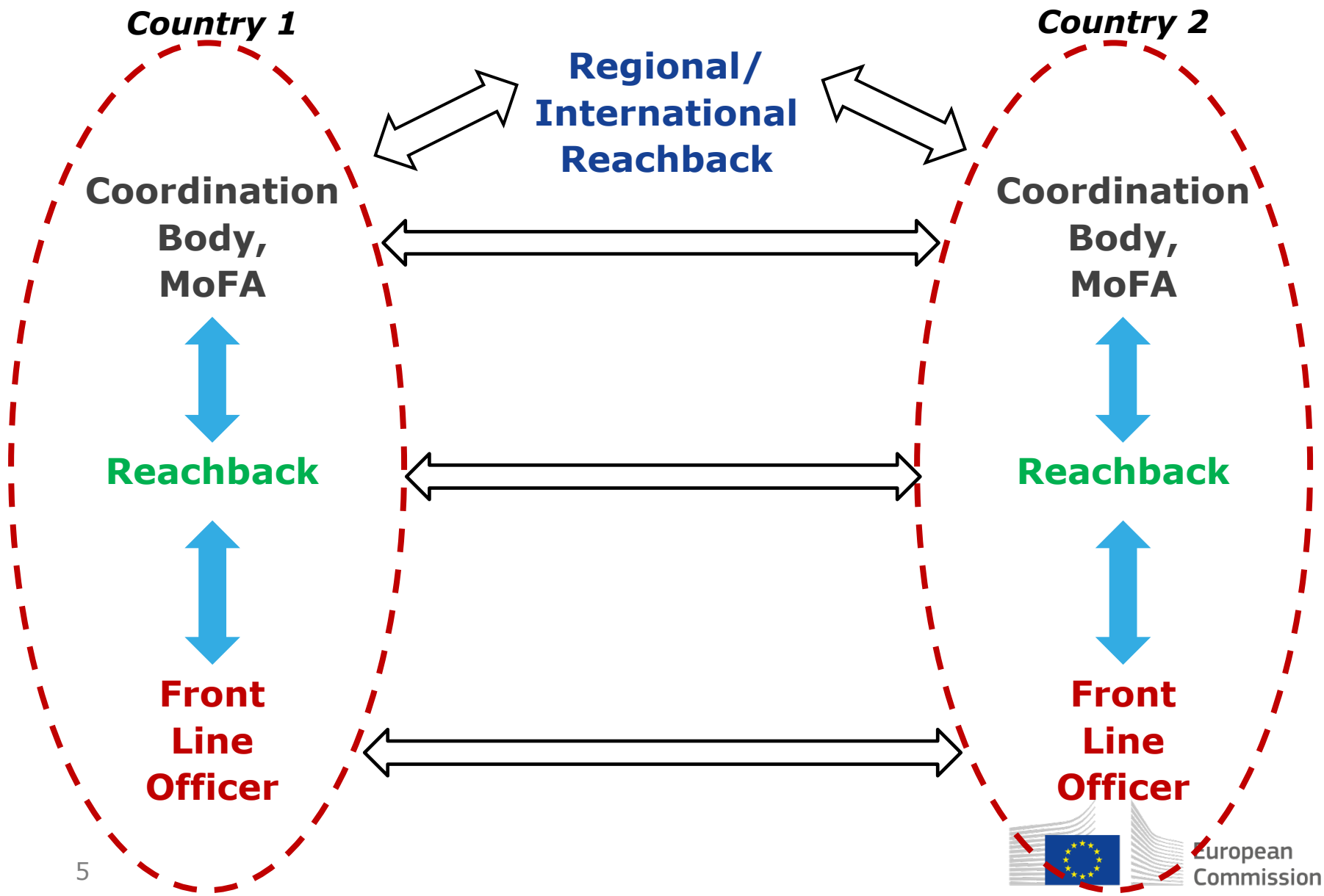
- Notification procedures/ protocols should be in place
  - **National level**
  - **International level**
- Procedures should be tested and updated
  - **Table top exercises**
  - **Simulation exercises**





European Commission

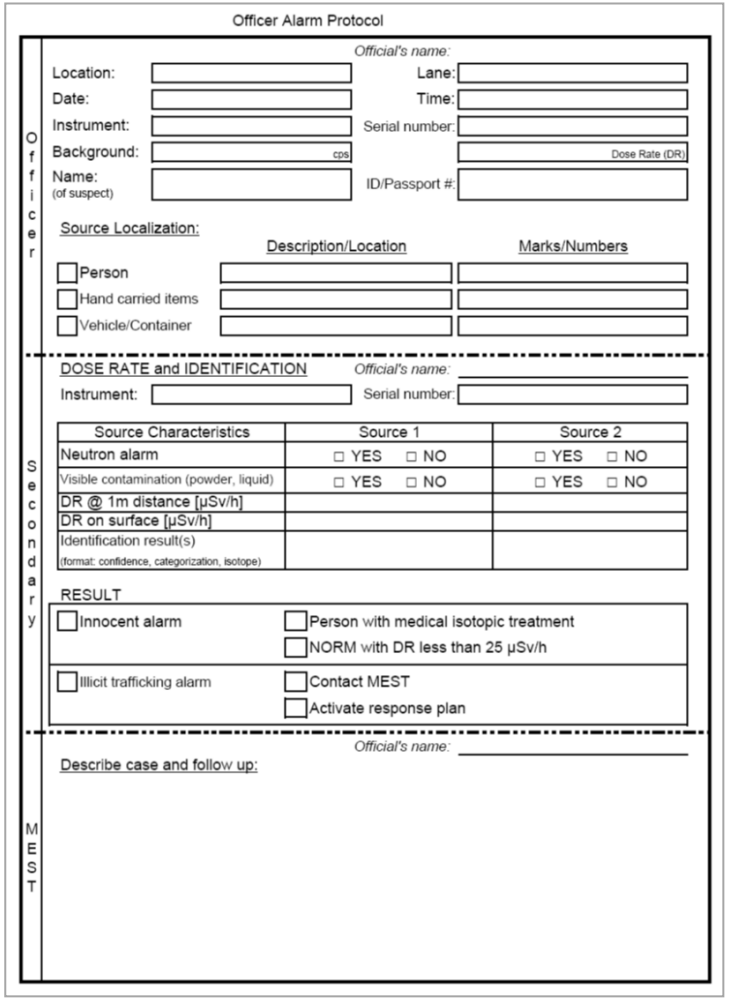
Authorities to contact



European Commission

Data Collection and Documentation

- Location
- Date and time
- Duty Personnel
- Type of alarm
- Equipment use
- Measurements done
  - spectra collected (background/ hotspot)
- Dose rate
- Results of identification
- Personal data of the individuals
- Data of the vehicles
- List of goods
- Actions taken
- Photos



Officer Alarm Protocol

Officer

Official's name:

Location: Lane:

Date: Time:

Instrument: Serial number:

Background: cps Dose Rate (DR)

Name: (of suspect) ID/Passport #:

Source Localization:

	Description/Location	Marks/Numbers
☐ Person		
☐ Hand carried items		
☐ Vehicle/Container		

Secondary

DOSE RATE and IDENTIFICATION *Official's name:*

Instrument: Serial number:

Source Characteristics	Source 1	Source 2
Neutron alarm	☐ YES ☐ NO	☐ YES ☐ NO
Visible contamination (powder, liquid)	☐ YES ☐ NO	☐ YES ☐ NO
DR @ 1m distance [µSv/h]		
DR on surface [µSv/h]		
Identification result(s) (format: confidence, categorization, isotope)		

RESULT

☐ Innocent alarm	☐ Person with medical isotopic treatment ☐ NORM with DR less than 25 µSv/h
☐ Illicit trafficking alarm	☐ Contact MEST ☐ Activate response plan

MEST

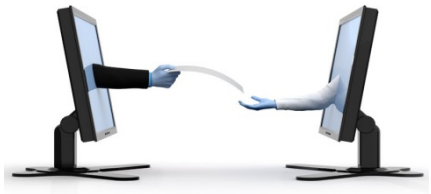
Official's name:

Describe case and follow up:

Info from other censors : e.g. X-ray, Manifest …?

Type of information

- Synchronous communication
  - **Telephone**
  - **Video-call**
  - **Real time data transmission from detector**
- Asynchronous communication
  - **Fax**
  - **Email**
  - **SMS**
  - **Photo-message**
  - **File transmission from detector (i.e. spectrum)**



Database for information sharing

- Design of database
- Data exchange protocols/ formats
- Data management to be established
- Software for data analysis
- Resources (funding/ HR)
- Sustainability

Regional/ International Database – Possibilities and challenges

- Regulatory Aspect
  - **Bilateral/ Multilateral Agreements**
  - **MoUs**
- Access to Database may be voluntary
  - **Sensitive information**
  - **Choice of information to be shared**
- Need for reliable and secure data exchange
- Definition of content – data to be shared ?
- Common data structure
  - **XML, N42.42 , IEC62755 , LINSII**
  - **Compatibility**
  - **Availability**
- Common Protocols and Software
- Involvement of International Organizations crucial
- Receiving/ providing help

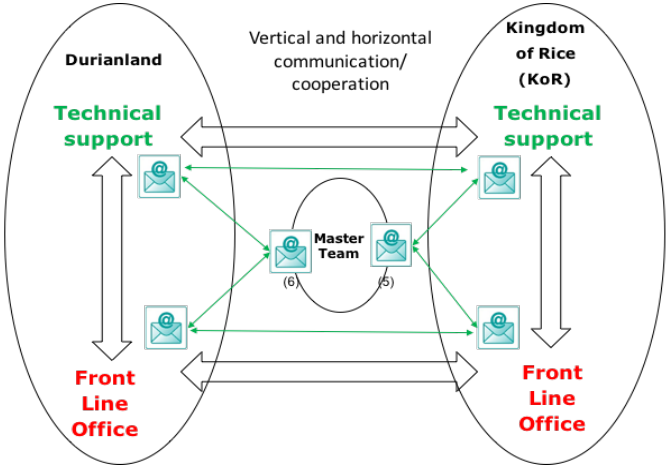
COSINUS 2016

Cooperation Simulation of Nuclear Security

What was it?

An exercise *simulating* regional cooperation and national coordination between two fictional countries (Durianland and Kingdom of Rice) on nuclear security detection at borders in the region of South East Asia, aiming:

- To promote harmonization and exchange of good practices among organizations from SEA countries, while identifying common challenges and room for improvement in the current practices
- To provide a platform for testing and improving internal (i.e. interagency) and external (i.e. international /regional) communications.



A **Master Team (MT)** of 5 experts **planned and drove the game**

- **JRC**
- **IAEA**
- **OAP**
- **Royal Malaysian Customs**
- **External consultant**

Facts and Figures

- **370 emails** sent by the 5 teams
- **90+ fictional documents** created, shared among MT members through **IAEA NUSEC portal**
- **4 cases played** out of **6 prepared**
- **20 Participants**
- **8 SEA countries**

Conclusions/ follow-up

- **COSINUS successful as exercise concept**
- **Many lessons learned** on rejection of imports, communication-cooperation, operational issues
- **Replication of exercise by IAEA in 2017**
- **Transfer** of **COSINUS concept** to **Nuclear Forensics domain** by **DOE**

European Commission

APEX Europa

Built on @tomic 2014, Apex Gold 2016 and others

APEX Europa was:

- **The first exercise of this kind at EU level, restricted to the 28 EU MS**
- **Tailored on EU unique characteristics:**
  - Schengen Area: no internal borders
  - External borders
  - Not a federal union

Objectives

- Organise a joint discussion between the 28 EU MS
- Provide with the experience of a fictional radiological and nuclear security scenario
- Trigger policy discussion on communication, coordination, collaboration at EU level
- discuss cooperation between different national, European and International actors
- Identify areas which could benefit from additional national commitment and/or EU support
- Enhance networking and capacity building between EU MS
- Demonstrate the EU capabilities and activities

Some elements of the exercise: scenario, videos and questions

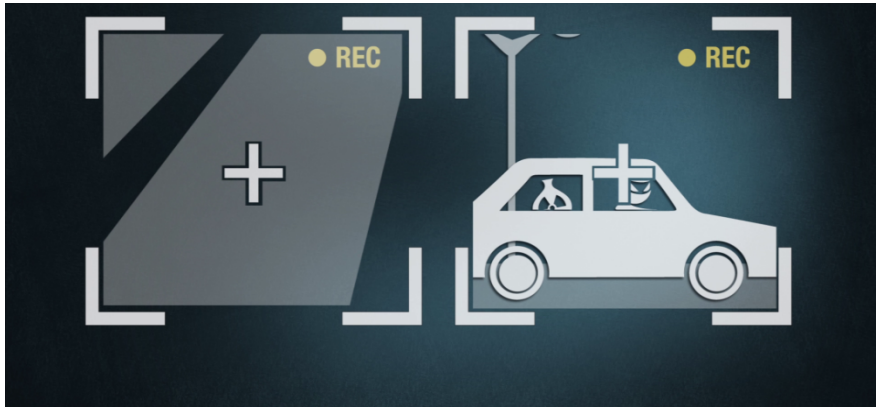
The exercise was built around a **fictional radiological and nuclear security scenario**, presented through four short videos, and a set of ten questions.

The scenario takes into account EU specificities, involving three fictive EU MS sharing internal borders and signatories of the Schengen Agreement.

Some elements of the scenario

The proposed scenario consists of two moments:

- a **radioactive source** is stolen in one MS and taken to a second MS;
- a small quantity of **nuclear materials** originating from outside the EU is seized at Schengen border after being detected at the airport in a passenger's carry-on luggage.



Some elements of the scenario

Both events are linked and will start a series of processes, including police investigation, involvement of security services, intervention of a nuclear security response team, triggering of a special CBRNE crisis team, deployment of a law enforcement team and radiation measurement experts to the crime scene, and nuclear forensic analysis and interpretation.

The scenario builds on trust between the different involved MS, which will enable exchange of information, use of law enforcement channels, enhancement of security measures, sharing of available capabilities, reporting to existing databases and overall prevention and deterrence of possible future incidents.

Videos and Questions & Answers

1. Four short video clips introduced each of its sections.

2. For each short video, addressing a specific threat to radiological and nuclear security, a set of questions was prepared.

3. For each question four to five possible answers were proposed, all equally possible or plausible.

4. One delegate per participating MS was provided with a clicker and could select one answer.

5. The answers to the questions were not tracked back to participants and will remain anonymous.

6. The results from the answers, provided in the form of percentages, were used as a basis for a policy discussion to which all represented EU MS participated.

Main outcomes and way forward

The exercise allowed some priority areas for enhanced cooperation:

1. Training and exercises
2. Border technologies and reachback capabilities
3. Different levels of capabilities among EU MS, the existing and emerging challenges, and the possible added value of the European Commission in liaising between interested MS, can be further explored
4. The network for sharing nuclear forensic competences
5. Analysis and benchmarking of environmental dispersion models
6. Further discussion on security of radioactive sources at EU and global level would be welcomed

The CoE Network:
56 Partner Countries, 8 regions

- **South East Europe, Balkans, Caucasus, Black Sea (Tbilisi)**
- **Middle East (Amman)**
- **Africa (3): North and Sahel (Algiers); Atlantic Façade (Rabat); East-Central (Nairobi)**
- **Gulf Cooperation Countries (Abu Dhabi)**
- **Central Asia (Tashkent)**
- **South East Asia (Manila)**

EUSECTRA: Train FLOs and Trainers

European Commission

International Cooperation

BMWG Border Monitoring Working Group

IAEA

GICNT

NNSA

ITWG Nuclear Forensics

INTERPOL

EUSECTRA

European Nuclear Security Training Centre

JRC- training facilities in Karlsruhe

JRC- training facilities in Ispra

National Facilities

EUSECTRA

Joint Research Centre

Summary

- Information exchange crucial
- Protocols and procedures for information sharing should be in place
  - **National level**
  - **International level**
- Agreements for requiring/ providing assistance
- Procedures and protocols should be regularly tested/ updated
- Type of information to be exchanged
  - **Well defined**
  - **Formats**
  - **Security**
- Database for information exchange
  - **National**
  - **Regional/International**

Stay in touch

EU Science Hub: ***ec.europa.eu/jrc***

Twitter: ***@EU_ScienceHub***

Facebook: ***EU Science Hub - Joint Research Centre***

LinkedIn: ***Joint Research Centre***

YouTube: ***EU Science Hub***

European Commission