

The European Commission's science and knowledge service

Joint Research Centre

European Commission Efforts in Nuclear Security and in CBRN-E Risks Mitigation

Dr. Kamel Abbas
Project Leader

European Commission, Joint Research Centre
Directorate Nuclear Safety and Security, Department Nuclear Security and
Safeguards, Nuclear Security Unit, Ispra (Italy)



The International Forum on Peaceful Use of Nuclear Energy
Nuclear Non-Proliferation and Nuclear Security
Tokyo, 7 December 2017





Funded by the European Union



CBRN
**Centres
of Excellence**
An initiative of the European Union

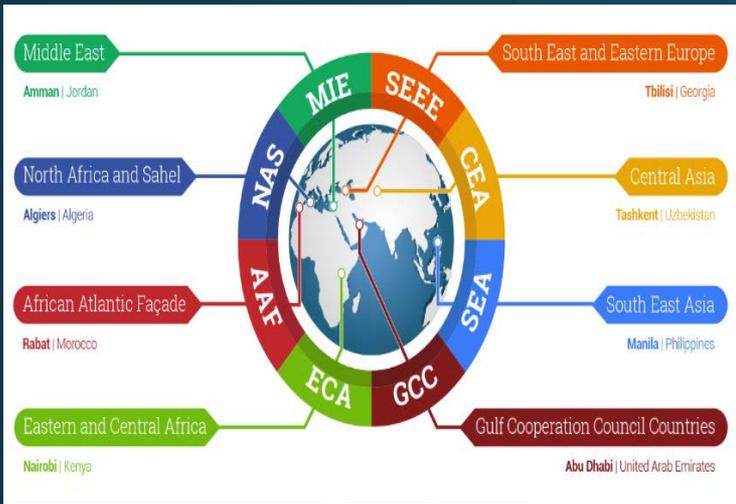


The EU CBRN Risk Mitigation Centres of Excellence Initiative

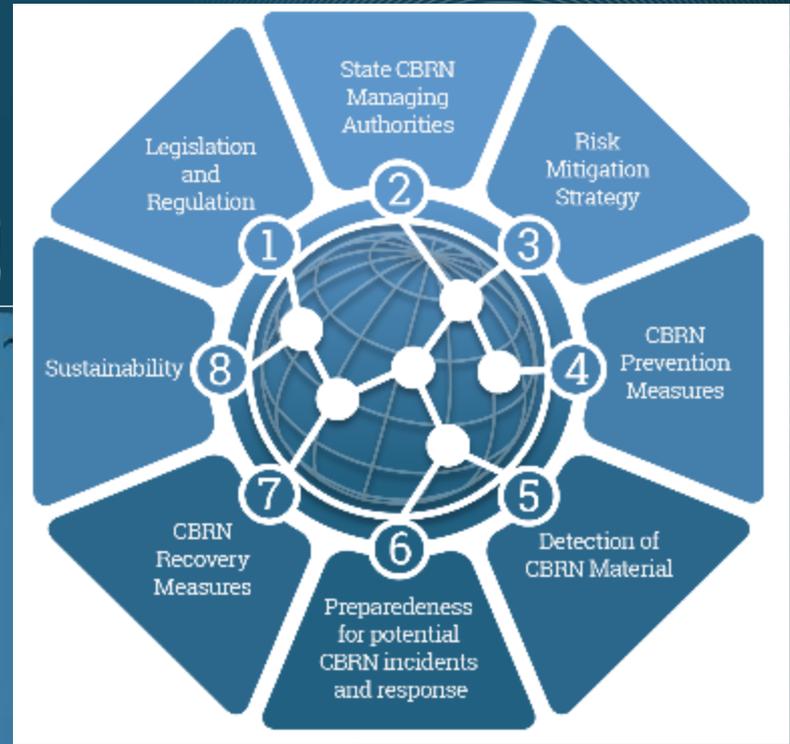
The EU CBRN Centers of Excellence (Coe)

Art 5 - Instrument contributing to Stability & Peace





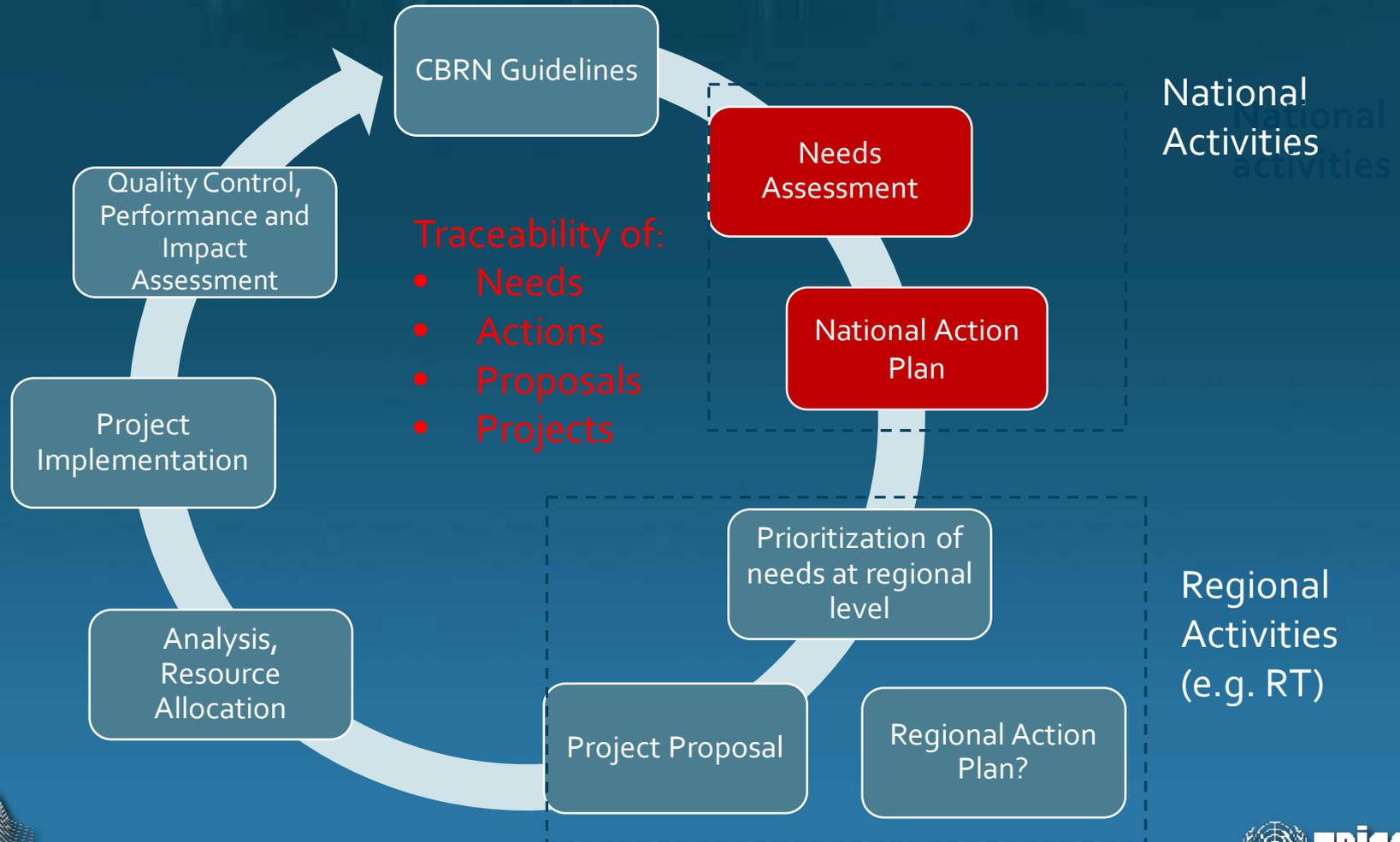
CBRN
Centres of Excellence
 An initiative of the European Union





Funded by the European Union

CoE Cycle of Activities





Example of a CBRN CoE Project Co-Implemented by JRC and IAEA



CBRN CoE Project-28

Supporting Development of an Integrated National Security System for Nuclear and Radioactive Materials

P28 – Objectives & Main Objectives

Overall objectives:

- Adoption of laws and regulations in order comply with international related standards for improving the security and safety of radioactive sources;
- Encouragement for establishing storage facilities and completion of inventories;
- Assist in the completion of the inventory of radioactive material;
- Assist in the secure management of radioactive material; and
- Dissemination of best practices for the development of a national response plan

Project Activities:

- A. Review of laws and regulations related to radiological and nuclear security
- B. Recommend how to establish a safe and secure management of radioactive material in use, and options for storage or disposal of disused sources
- C. Assist in the completion of the inventory of RN materials.
- D. Disseminate best practices for the development of a national response plan for potential RN events.



Under the implementation of EU CBRN CoE Project 28



National Training Course in Lao PDR on Nuclear Security Awareness and Security of Radioactive Materials for Senior Officials

Hosted by the Ministry of Science and
Technology, Lao P.D.R.
27 – 30 January 2015
Vientiane, Lao P.D.R.

South East Asia Regional Workshop Elements of Response to Nuclear Security Events

Hosted by Vietnam Agency for Radiation and
Nuclear Safety (VARANS)

3 – 6 November 2015, Hanoi, Melia Hotel,
the Socialist Republic of Vietnam





Update to WGRSS-5



Vienna, April 20th 2016



Under the EC funding Instrument for Nuclear Safety Cooperation



European
Commission

Joint Research Centre
the European Commission's in-house science service

**Regional Cooperation on
Emergency Preparedness
and Response in South
East Asia Region**

Montserrat Marin Ferrer
Miguel Angel Hernandez Ceballos

European Commission
Joint Research Centre (JRC)

Kuala Lumpur (Malaysia)

18th February 2016

ec.europa.eu/jrc

Joint
Research
Centre



Regional Cooperation to Enhance a Worldwide Nuclear Security Culture – Contribution to Global Nuclear Security Discussions

EU-CBRN-COE/JAEA joint seminar on Regional Cooperation to Enhance a Worldwide Nuclear Security Culture

Co-organized by European Commission, and
Integrated Support Center for Nuclear Nonproliferation and Nuclear Security of JAEA
In cooperation with Middle East Scientific Institute for Security
31 October 2016, Amman, Jordan



- Follow-up of EU High-level Event on "International Cooperation to enhance a worldwide nuclear security culture" on the occasion of the NSS 2014 (Amsterdam, March 2014)
- Seminar co-organised by EC and JAEA (Amman, October 2016)
- in cooperation with Middle East Scientific Institute for Security (MESIS), Middle East Secretariat of the EU Centres of Excellence initiative; the international network of Nuclear Security Training and Support Centers (NSSC); and the International Nuclear Security Education Network (INSEN)

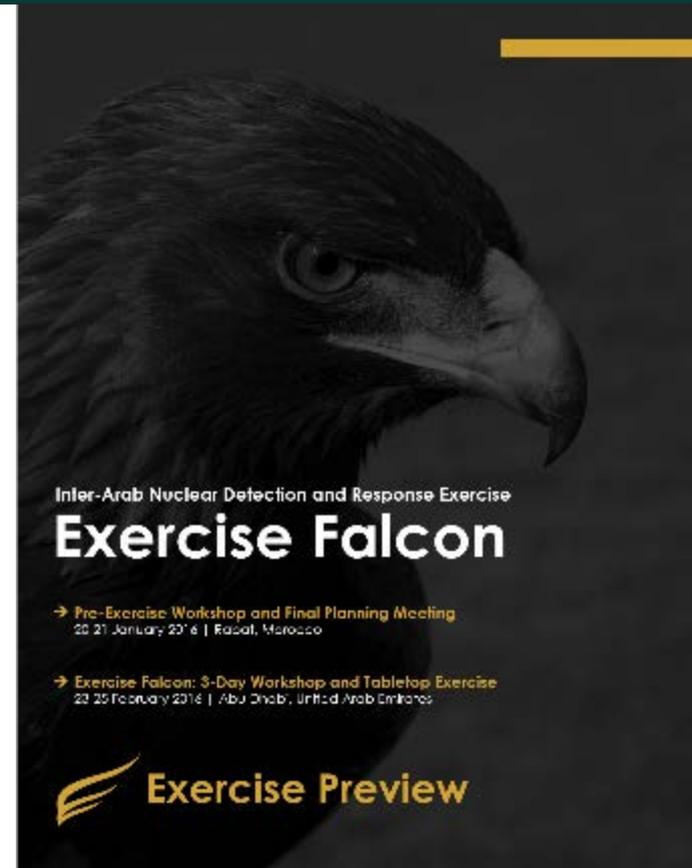
- Objectives:

- enrich the nuclear security culture in the Middle East and GCC region
- promote the importance of ensuring nuclear security through regional collaboration among NSSC and INSEN members



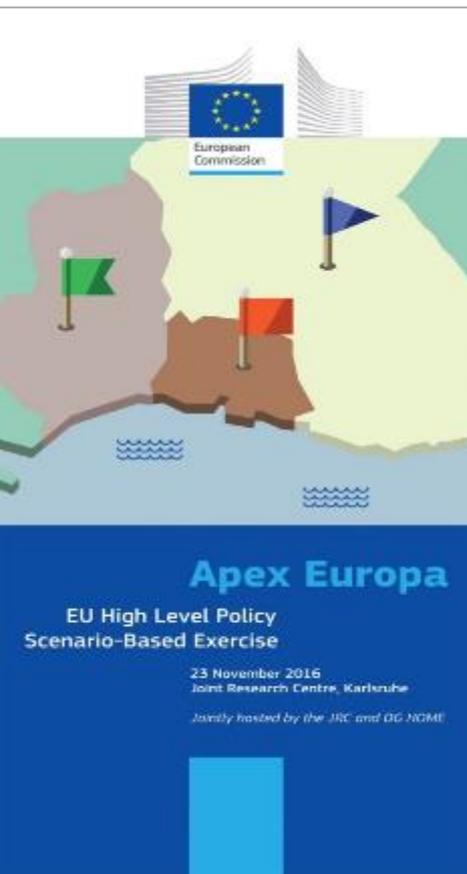
Falcon: First inter-Arab Nuclear Detection and Response Exercise

- Table-top exercise hosted by UAE (23-25 February 2016) under the auspices of the EU CBRN Centres of Excellence
 - regionally-oriented
 - with focus on key aspects of the nuclear security activities related to detection and initial response to RN threats
 - in partnership with the Governments of the United Arab Emirates, Jordan, Morocco, the Global Initiative to Combat Nuclear Terrorism (GICNT) and other relevant international organizations
- Objectives:
 - promote regional approaches in matters of nuclear detection and response
 - enhance national and regional interagency coordination and cooperation
 - encourage information sharing





APEX Europa: EU High Level Scenario-Based Policy Discussion on Nuclear Security



- First exercise of this kind at EU level, restricted to the 28 EU MS (23 November 2016)
- EC played the role of facilitator for the organisation and conduct of the APEX
- Tailored on EU unique characteristics:
 - Schengen Area: no internal borders
 - External borders
 - Not a federal union
- Agreed way forward for joint actions
- Follow-up Workshop on nuclear security training in the EU (30 November 2017)
 - defining possible actions related to training in nuclear security, complementing the capabilities that already exist in the EU MS



WSF 2017 thematic session on "Security Risks Reduction through CBRNE Science, Education and Human Factors"

- Jointly organised with the Office of the Chief Science and Technology Offices (OCSTO) of the Ministry of Home Affairs of Singapore
- In close cooperation with the Middle East Scientific Institute for Security (MESIS), Middle East Secretariat of the EU Centres of Excellence initiative
- Bringing together scientists and practitioners from the security-related domains to share on how the science, human factors and brain research are applied for the reduction of security risks and threats, globally
- Interdisciplinary approach to reduce security risks, looking not just at scientific developments and knowledge in CBRNE, but integrating the also important of cultural and human factors

WORLD SCIENCE FORUM
2017 JORDAN
SCIENCE FOR PEACE
7-11 NOVEMBER 2017

External cooperation benefits



JRC integration at international level

- *Close coordination with US SLD, IAEA and EU Council SG at the **Border Monitoring Working Group**.*
- *Created in 2006 under the auspice of the IAEA to share relevant information in border monitoring activities and coordinate international support programs in the field*
- ***Core members: IAEA, US DoE and EC***

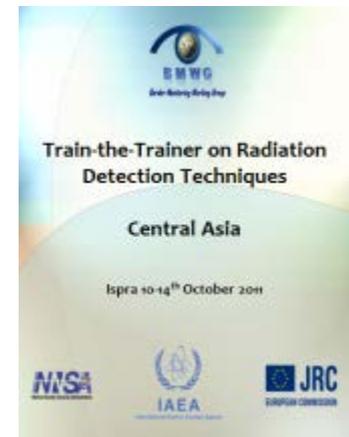


Coordinated Technical Approach

- Joint Assessment missions
- Coordinated equipment deployment
- Joint Training and Seminars

Coordinated Training Approach

- Joint Training curricula for FLO and Train-the-Trainer
- Joint Training sessions



Example of R&D projects in NS



Detector Validation, testing and standardization

- ITRAP+10 Phase II: Illicit Trafficking Radiation Detection Assessment Programme)
- SCINTILLA: Improvement of RN detection capabilities by developing and validating innovative solutions

Innovative Detection Technologies

- C-BORD: (effective Container inspection at BORDER control points)
H2020 Research and Innovation Action
EU Stakeholders: **Universities/Research Centres/Companies/End Users**
- Detection of SNM in Containers by Pulsed Neutron Interrogation
JRC – Collaboration with Israel within an MoU

Security courses EUSECTRA



More than 5 years experience in security training in detection of material out of regulatory control

Pilot EUSECTRA facility established in line with CBRN Action Plan recommendation

Customers: courses organised under DEVCO's project, as well as on demand from IAEA, DG TAXUD, US DoE

Strongly based upon hands on exercises using radioactive and nuclear materials and large set of detection instruments

Target participants: Front Line Officers (customs, border guards...) and trainers (train the trainer concept)

About 8 weeks courses per year in Ispra

ADD KA

15 to 20 participants per course