



## Cooperative projects in the Nuclear Security area with CIS countries

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# The TACIS Support Program

- Following the breakdown of the former Soviet Union, the European Commission (EC) initiated a [Technical Assistance to the Commonwealth of Independent States](#), the TACIS support program, in 1992.
- In the initial phase, only [nuclear safety](#) projects were funded under the TACIS program, but from 1994 (EU summit in Essen), projects related to [nuclear safeguards](#) were included.
- In accordance with its mission and its long-standing competencies in the field, the [Joint Research Centre](#) (JRC) was entrusted with the implementation of the corresponding projects.



# The TACIS Support Program

- The 1994-2004 TACIS support program
- The efforts were based on the following three pillars for a sustainable improvement of **NMAC**:
  - Training on safeguards methodology,
  - Transfer of nuclear analytical capabilities,
  - Development of instrumentation
- Foundation of the "Nuclear Smuggling International Technical Working Group" (**ITWG**) (after the G8 Summit in 1996)
- In 2000, activities related to **nuclear security** were developed, essentially dealing with analytical capabilities for characterizing nuclear material intercepted from illicit trafficking and implemented under the TACIS program.

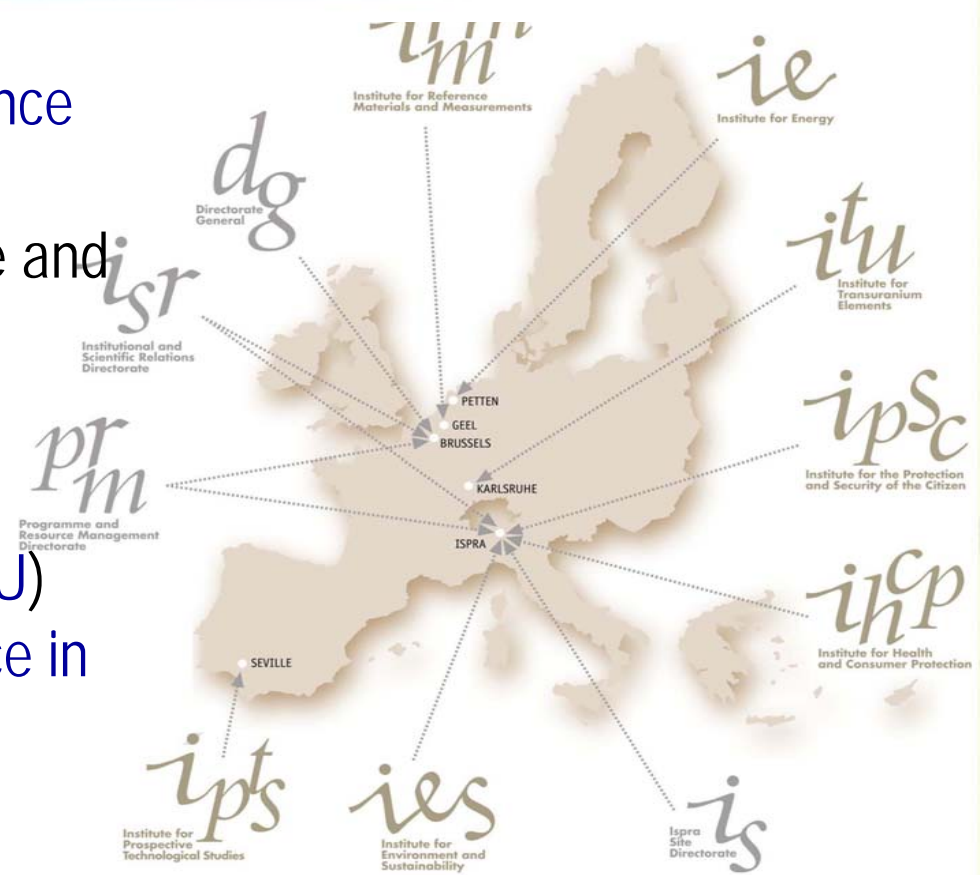


# The TACIS Support Program

- The 2005-2012 TACIS support program
- The UN resolution 1540 (April 2004), the proliferation security initiative (PSI, launched in 2003) and the Global Initiative to Combat Nuclear Terrorism (July 2006), reaffirmed the **grave concern of the international community** on the threats associated with proliferation issues and with illicit trafficking.
- In 2005, a **new program** was developed in collaboration with the beneficiary countries addressing **both nuclear safeguards and nuclear security**

# The JRC expertise

- ... to provide customer-driven scientific and technical support for the conception, development, implementation and monitoring of EU policies ...
- ...the JRC functions as a **centre of science and technology reference** for the EU, independent of special interests, private and national
- The Institute for the Protection and the Security of the Citizen (**IPSC**) and the Institute for Transuranium Elements (**ITU**) have more than **3 decades of experience in dealing with nuclear material and in all safeguards related issues**





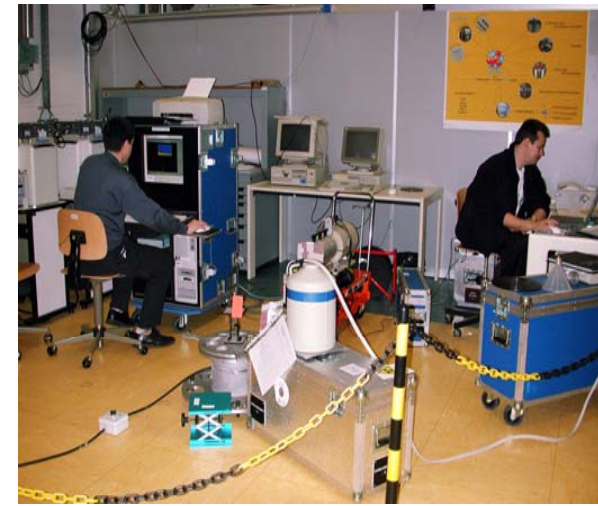
# The JRC expertise

The scientific support to the TACIS projects is based on:

- The long standing experience of both JRC Institutes;
- The institutes' unique infrastructure and facilities for developing, applying and deploying up-to-date techniques and state-of-the-art methodologies
- The implementation of safeguards activities in a neutral way, i.e. independent from national or private interests

In particular, the JRC is well recognized by the international scientific community for:

- the development of techniques, equipment and methodologies;
- the on-site assistance;
- the training of inspectors and operators;
- the evaluation and qualification of safeguards equipment.



# The Model Action Plan

- In the 2<sup>nd</sup> half of the 90's, a **comprehensive approach** needed to be developed enabling credible nuclear forensics.
- ITU took the initiative to develop a Model Action Plan within the ITWG.
- This plan provides an **integrated and common response to illicit trafficking** and makes use of a three steps approach (**prevention, detection and response**) including feedback and lessons learned to enhance the deficient situation at the origin of the incident



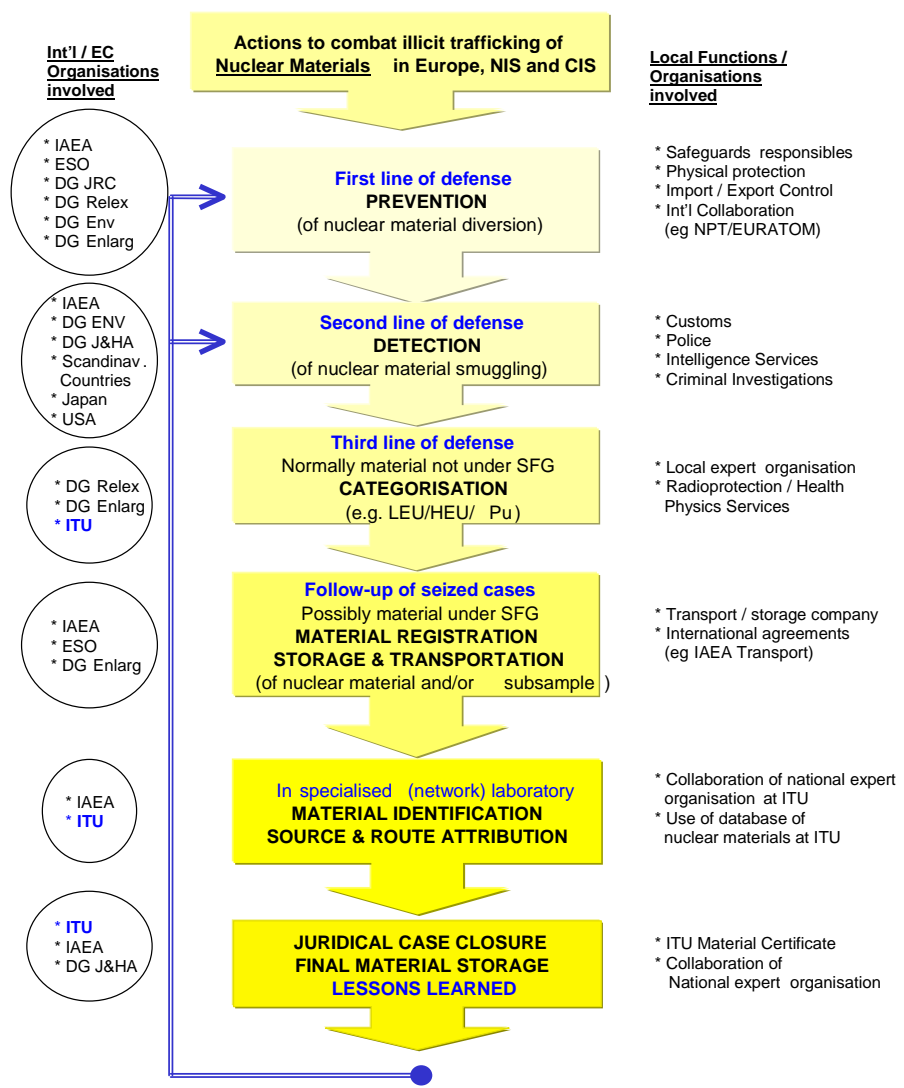
# Combating Illicit Trafficking of Nuclear Materials

Joint Research Centre

- Local fact finding mission
- Implementation of a Model Action Plan
- Selection and delivery of appropriate equipment
- Training and joint analysis



Demonstration exercise in Bucharest

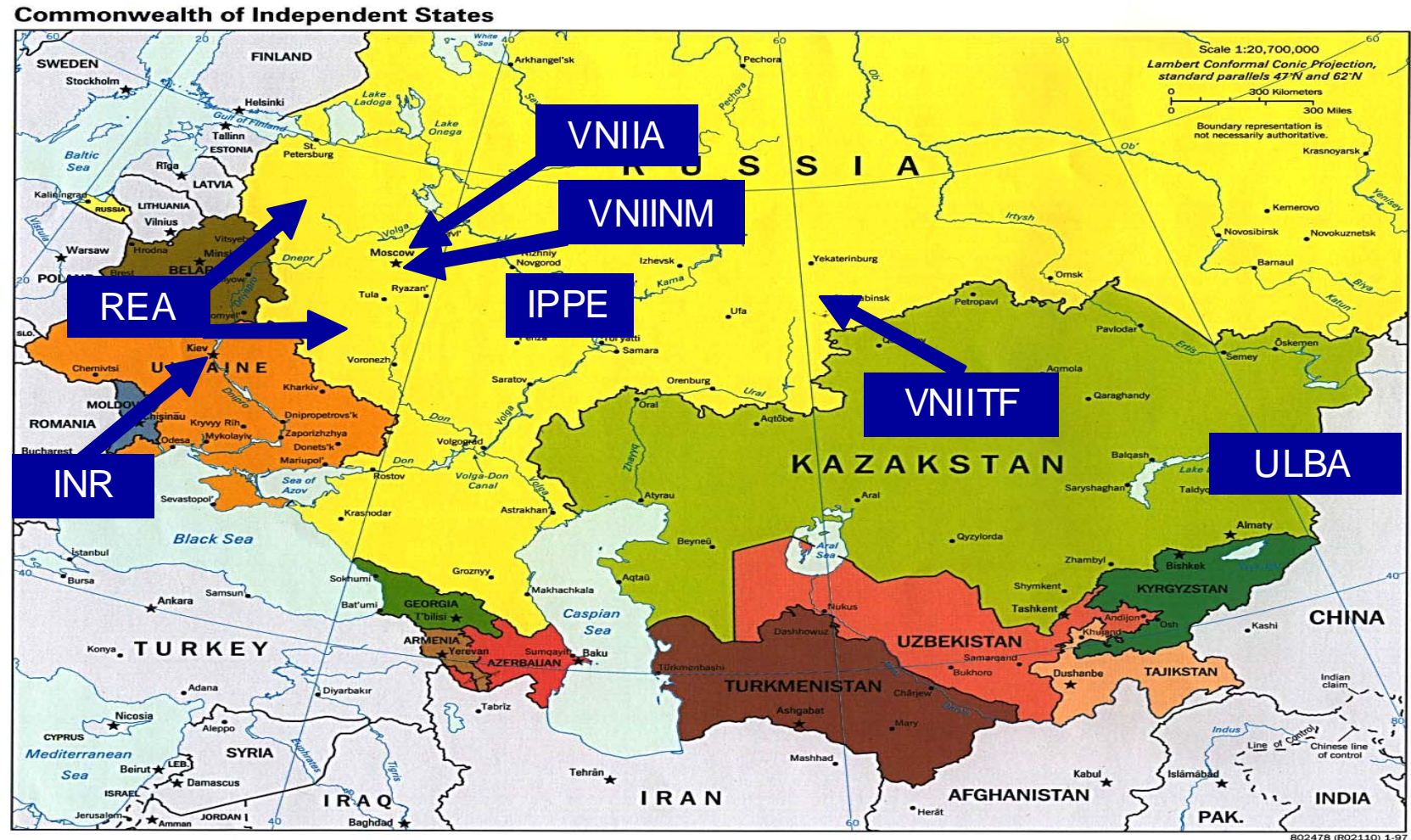


**Major partners: IAEA and Europol**





# Focus on Prevention: the TACIS support program 1994 – 2004



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# TACIS support program 1994 – 2004

- IPPE: Support to the creation of dedicated training centers for nuclear safeguards and Material Control and Accounting (MC&A):
  - Russian Methodological and Training Center (RMTC) in Obninsk, in collaboration with US DoE and MINATOM (now Rosatom);
  - Ural Siberian Methodological and Training Center (UrSiMTC) in Snezhinsk;
- VNIIA: Establishment of production strategy of instrumentation for the State System of Accountancy and Control (SSAC) of Nuclear Materials in Russia with the All Russia Research Institute of Automatics;
- VNIINM: Design and set up of three laboratories (nuclear forensic, analytical and metrological laboratory) at the A.A. Bochvar All Russian Institute of Inorganic Materials VNIIMN;
- REA: Pilot project on enhancement of the safeguards system at two nuclear power plants, Kursk and Kalinin with Rosenergoatom;
- VNIITF: Modernization and enhancement of Nuclear Material Accountancy and Control (NMAC) at the Mayak RT-1 plant
- INR: Pilot project on combating illicit trafficking of nuclear materials with the Institute for Nuclear Research in Kiev.
- ULBA: Enhancement of facilities Mass/Volume, Containment/Surveillance and Training at Ulba Metallurgical Plant (UMP);
- ULBA: Enhancement of safeguards at the Ulba fabrication plant, the Almaty VVER reactor and the Kurchatov reactor in Kazakhstan.

**The Russian Methodological Training Centre RMTC**

Joint Research Centre

**RUSSIAN METHODOLOGICAL AND TRAINING CENTER ON NUCLEAR MATERIALS CONTROL AND ACCOUNTING (RMTC)**

is the first entity in Russia established for propagation of advanced technologies for nuclear material control and accounting (NMC&A), theoretical and practical training of nuclear facility personnel and Rostechnadzor and Rosatom inspectors in MC&A subjects.



2007



# TACIS support program 1994 – 2004

## Highlight: The Russian Methodological Training Centre RMTC

- Establishment of the RMTC for Nuclear Safeguards and Nuclear Material Accountancy and Control
- 3 Projects (1995, 1996 and 1997)
- More than 5 M€ of which 2.245 M€ of equipment
- Collaboration with US DoE
- RMTC trained 2985 nuclear experts in 414 training courses from all over the RF, Kazakhstan, Ukraine, Lithuania, Armenia and Malaysia (1/01/2007)
- RMTC organised 5 international seminars sponsored by US DoE and EC



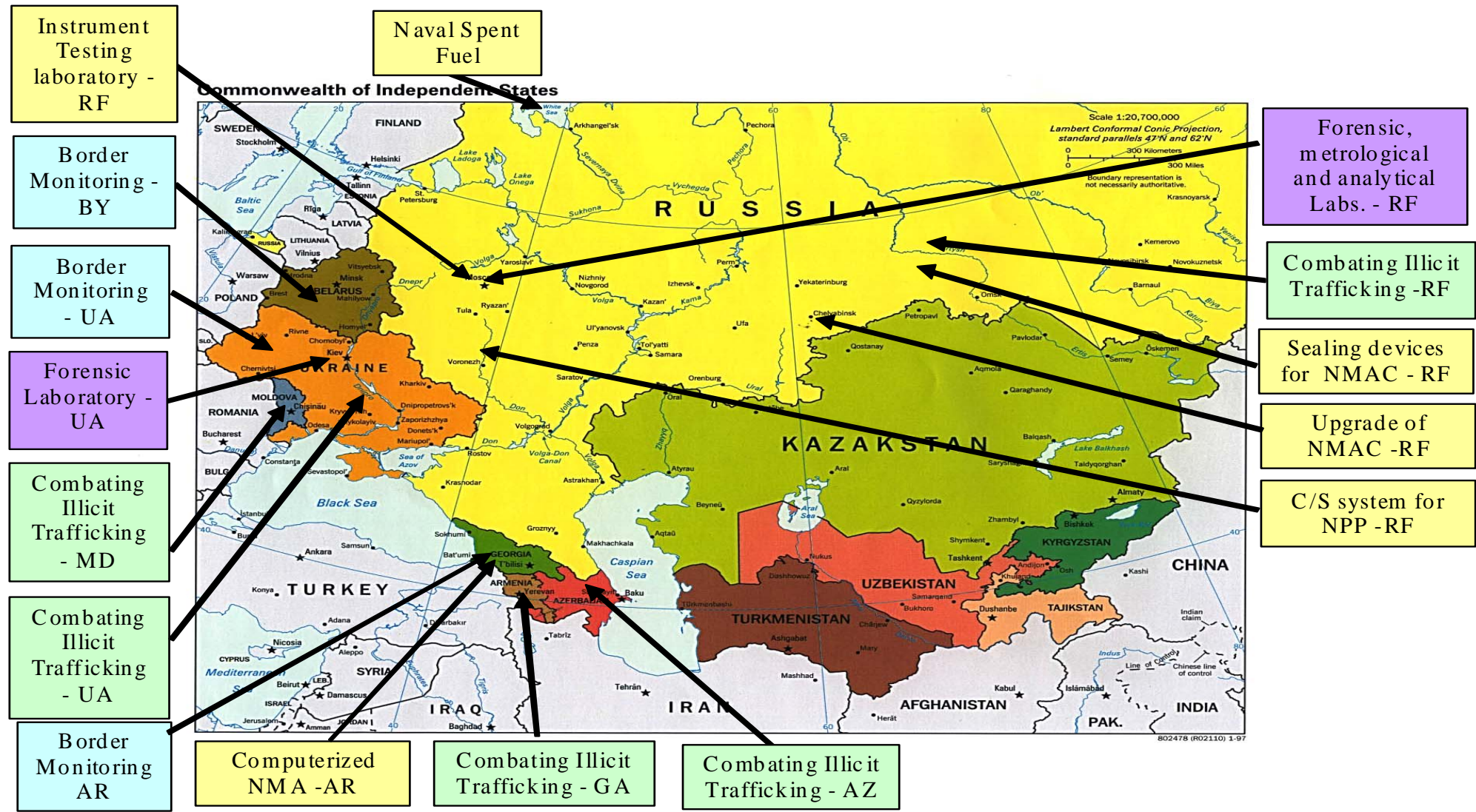


## Focus on Detection and Response: the TACIS support program 2005 – 2012

- The on-going program is larger in terms of budget as well as in geographic distribution.
- It aims at completing previous projects, reinforcing and sustaining past activities.
- It addresses **new challenges** in particular the upgrade of detection capabilities and the development and implementation of proper response mechanisms in accordance with international standards.

# TACIS support program 2005 – 2012

Joint Research Centre





# TACIS support program 2005 – 2012

## RUSSIAN FEDERATION: 7 projects

Title	Institute	Description
Mayak	IPSC	Improvement of accountancy and control of hold-up and waste in RT-1 plant at Mayak
TEMPEST	IPSC	Establishment of testing laboratory at VNIIA for certification of NMAC instruments
TID	IPSC	Development and introduction of modern sealing devices at Minatom's enterprises
Bochvar	ITU	Analytical and metrological support on NMAC
Andreeva Bay	IPSC	Development of technical conditions for SNF retrieval and accountancy
Kursk-Kalinin NPP	IPSC	Computerized nuclear material accountancy system for Kursk NPP and Kalinin NPP
UrSiMRC	IPSC	Sustainability of UrSiMRC (Training)



## REGIONAL: 1 multi-country project

Title	Country	Description
Illicit trafficking	Russia	Implementation of measures to combat illicit trafficking of radioactive and nuclear material
	Ukraine	
	Moldova	
	Georgia	
	Azerbaijan	

## Belarus: new project initiated under AP 2007

Title	Institute	Description
Border	IPSC	Belarus border crossing station (Measures of fight against illicit trafficking of nuclear and radioactive material)





## UKRAINE: 2 projects

Title	Institute	Description
Border	IPSC	Ukrainian border crossing station (Measures of fight against illicit trafficking of nuclear and radioactive material)
Laboratory	ITU	Enhancing the capability for analysis of seized nuclear materials and radioactive substances by the main expert organization of Ukraine

## ARMENIA: 2 projects

Title	Institute	Description
Medzamor NPP	IPSC	Adaptation and commissioning of a computerized NMA system in Armenian NPP Medzamor
Border	IPSC	Armenian border crossing station (Measures of fight against illicit trafficking of nuclear and radioactive material)

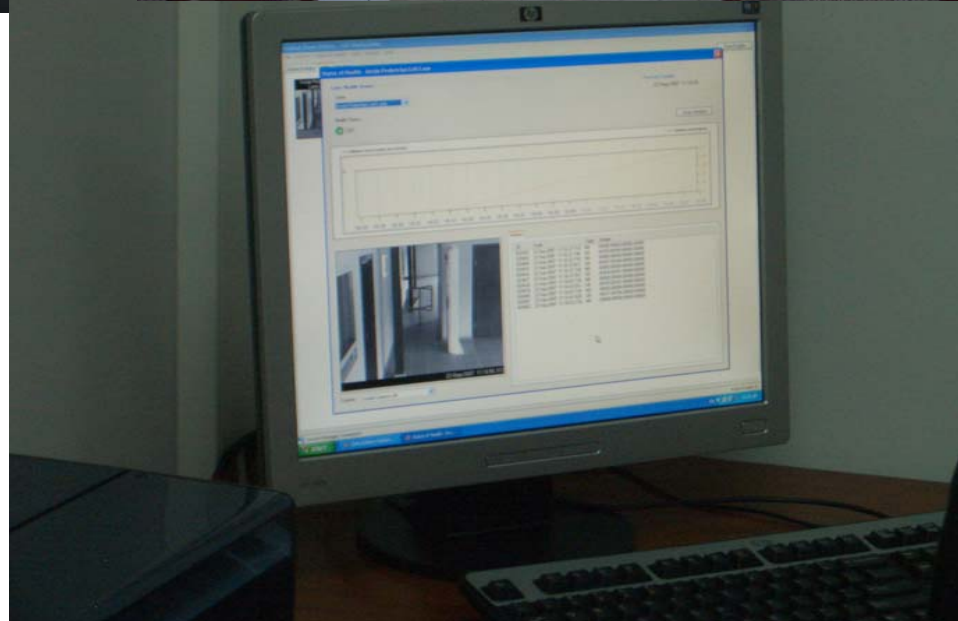


- Close coordination with US SLD, IAEA and EU Council SG at the Border Monitoring Working Group
- Joint implementation in Georgia (SLD/JRC)
- Joint Training in Ukraine to be duplicated (IAEA/SLD/JRC)



- Provision of detection equipment at crucial nodal points
- Projects in:
  - Russian Federation
  - Ukraine
  - Armenia
  - Georgia
  - Belarus

# Coordination in Georgia





## Conclusion

- The significant experience that the JRC has been made available and transferred to CIS countries through dedicated projects carried out in the framework of the TACIS program.
- The TACIS program started in 1992 and ended in 2006.
- The new cooperative projects mentioned above, were launched in 2005 with initial funding from TACIS. These projects will continue under two new instruments:
  - the **Instrument for Stability** (IfS) launched in 2006 and dedicated to nuclear security and
  - the **Instrument for Nuclear Safety Cooperation** (INSC) started in 2007 under which nuclear safeguards projects will still be funded.



## Conclusion

- In the field of nuclear security, the new Instrument for Stability extends the geographical scope of the [support worldwide](#).
- In 2009, South East Asia and the Mediterranean Basin will be included to the list of potential beneficiary countries where support projects will be implemented after a fact-finding phase to assess the needs.
- The JRC is [co-coordinating](#) its efforts with other ongoing international activities and major international support programs (IAEA, US DoE Second Line of defense program and the European Council) to avoid duplication, to identify gaps and to provide an integrated response to the illicit trafficking of nuclear and other radioactive materials.