ESTABLISHING SUSTAINABLE INFRASTRUCTURES FOR EDUCATION AND TRAINING IN RADIATION, TRANSPORT AND WASTE SAFETY:

IAEA'S APPROACH TO SUPPORT MEMBER STATES

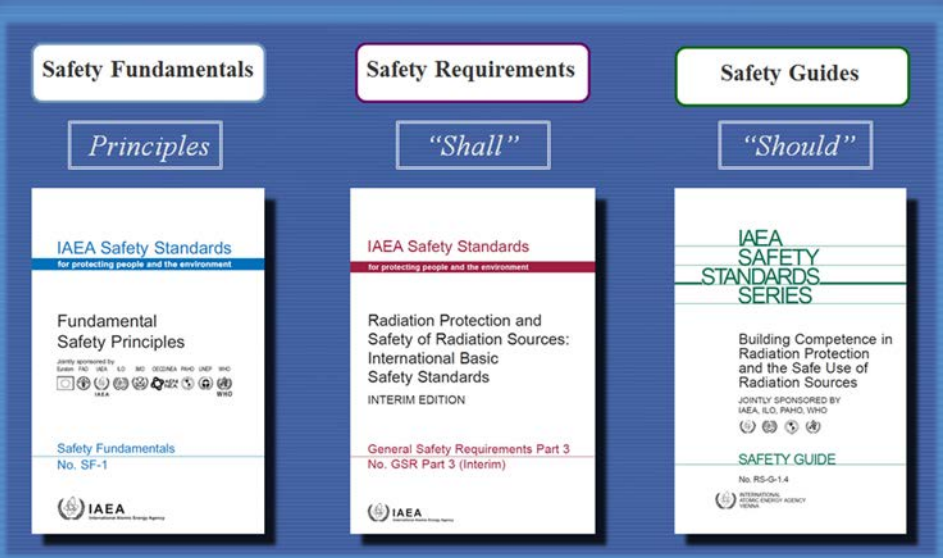
John Wheatley
Head, Technical Assistance & Information Management Unit
Division of Radiation, Transport and Waste Safety
Department of Nuclear Safety and Security
International Atomic Energy Agency
j.wheatley@iaea.org

IAEA
International Atomic Energy Agency

IAEA Safety functions

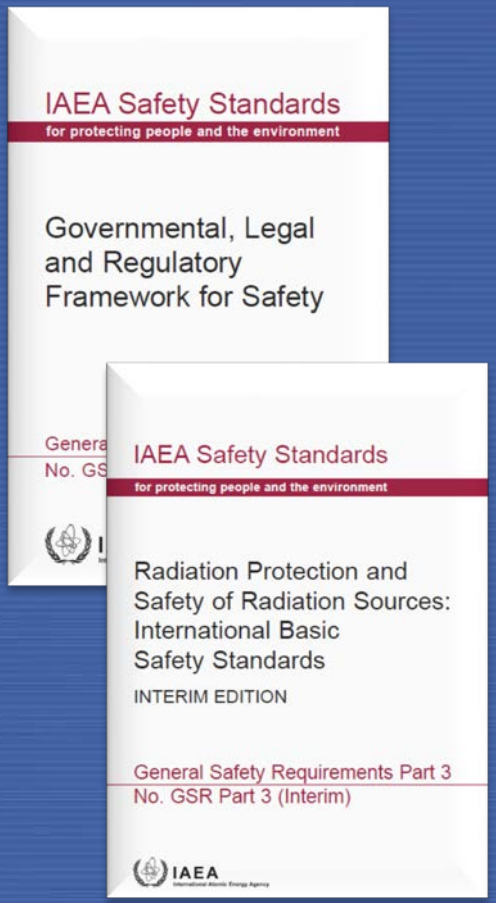
IAEA Functions in Radiation & Waste Safety (Article III.A.6)

To establish standards of safety



IAEA

IAEA REQUIREMENTS FOR EDUCATION AND TRAINING IN RADIATION PROTECTION



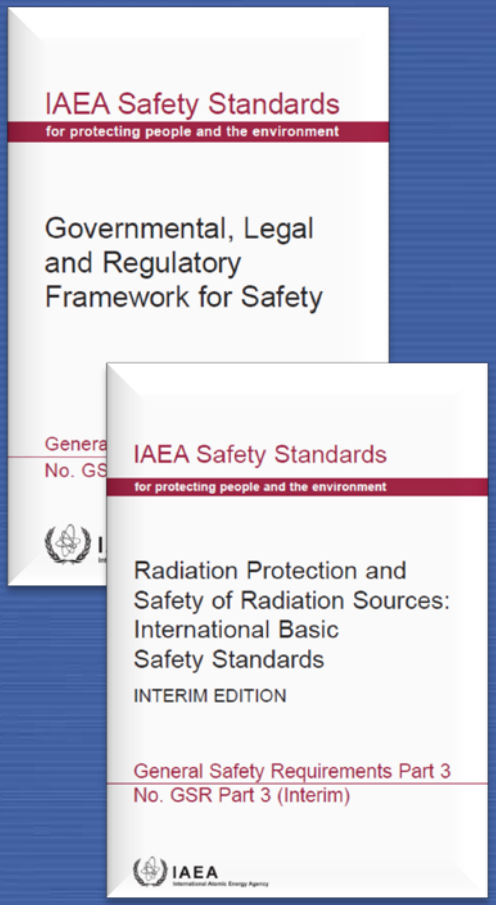
RESPONSIBILITIES OF GOVERNMENTS

- Establish a national policy and strategy for safety
- Make provisions for education and training services

- Establish requirements for:
  - education, training, qualification and competence
  - formal recognition of qualified experts

IAEA

IAEA REQUIREMENTS FOR EDUCATION AND TRAINING IN RADIATION PROTECTION



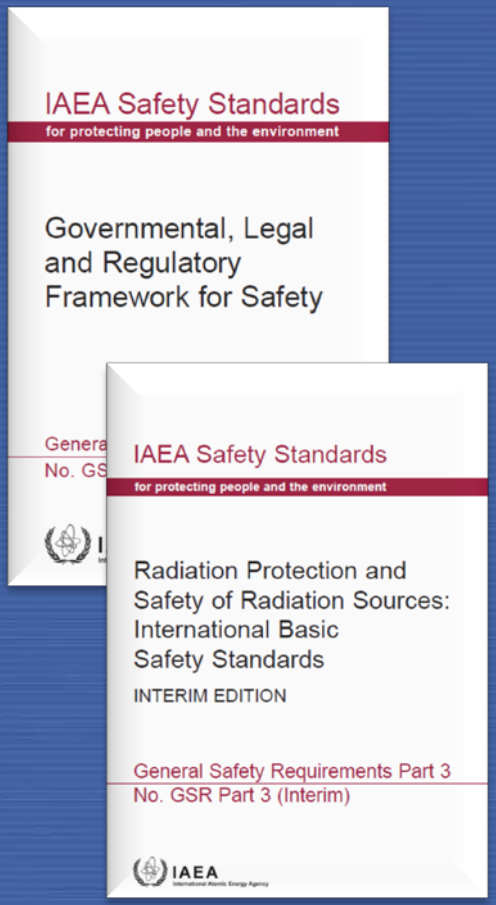
RESPONSIBILITIES OF THE REGULATORY BODY

- **For its staff:**
  - Ensure regulatory staff are qualified and competent

- **In relation to registrants, licensees and employers**
  - Ensure that they apply the requirements for education, training, qualification and competence
  - Verify the competence of individuals
  - Require that medical/health professionals are specialized and meet the requirements for education, training and competence in radiation protection

IAEA

IAEA REQUIREMENTS RELATED TO EDUCATION AND TRAINING IN RADIATION PROTECTION



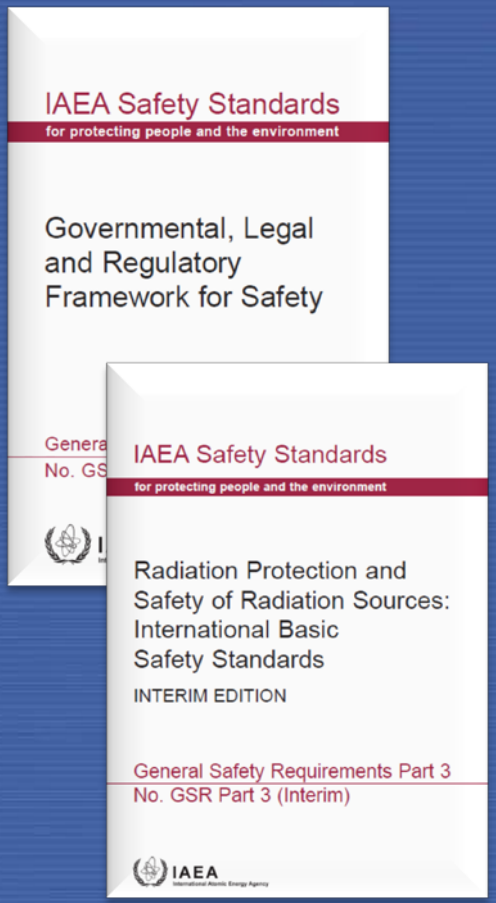
RESPONSIBILITIES OF AUTHORIZED PARTIES (e.g. Licensees)

Ensure that persons have appropriate education, training, qualification, information and instruction

- Especially in relation to :
  - controlled/supervised areas
  - respiratory protective equipment
  - health risks from occupational exposure
- Provide periodic retraining

IAEA

IAEA REQUIREMENTS RELATED TO EDUCATION AND TRAINING IN RADIATION PROTECTION



RESPONSIBILITIES OF WORKERS

- Accept such information, instruction and training in protection and safety as will enable them to conduct their work in accordance with the requirements of the Standards

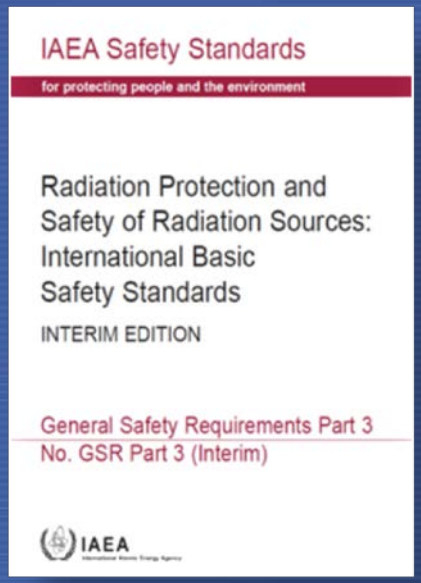
IAEA

IAEA Radiation Safety Standards: Status

- IAEA Safety Standards are not legally binding on Member States but may be adopted by them, at their own discretion

however...

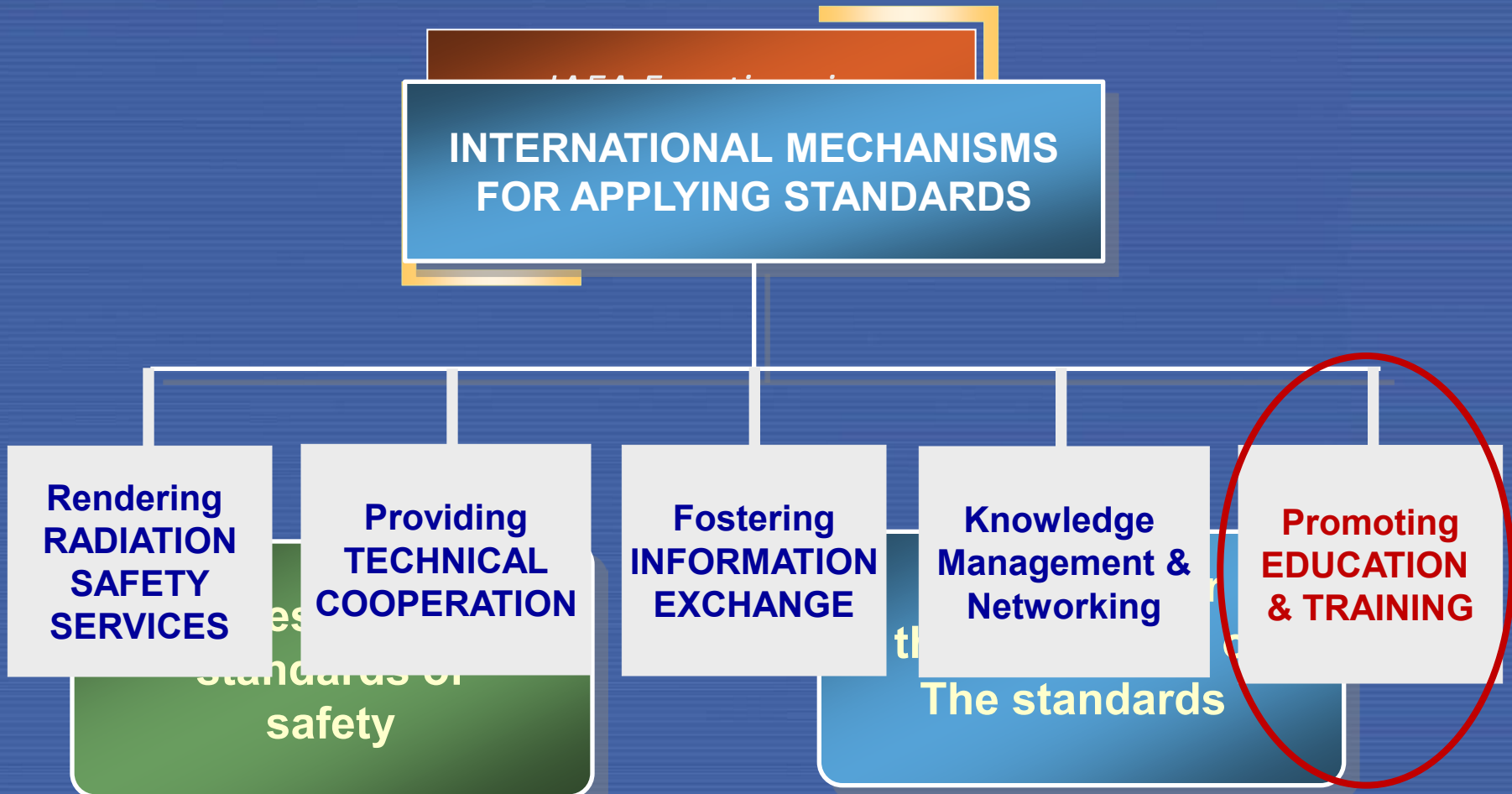
- Member States receiving IAEA assistance are obliged to apply IAEA Safety Standards



For example, Member States need to have an adequate radiation safety infrastructure in order to receive radiation sources through IAEA Projects

IAEA

IAEA Safety functions



IAEA

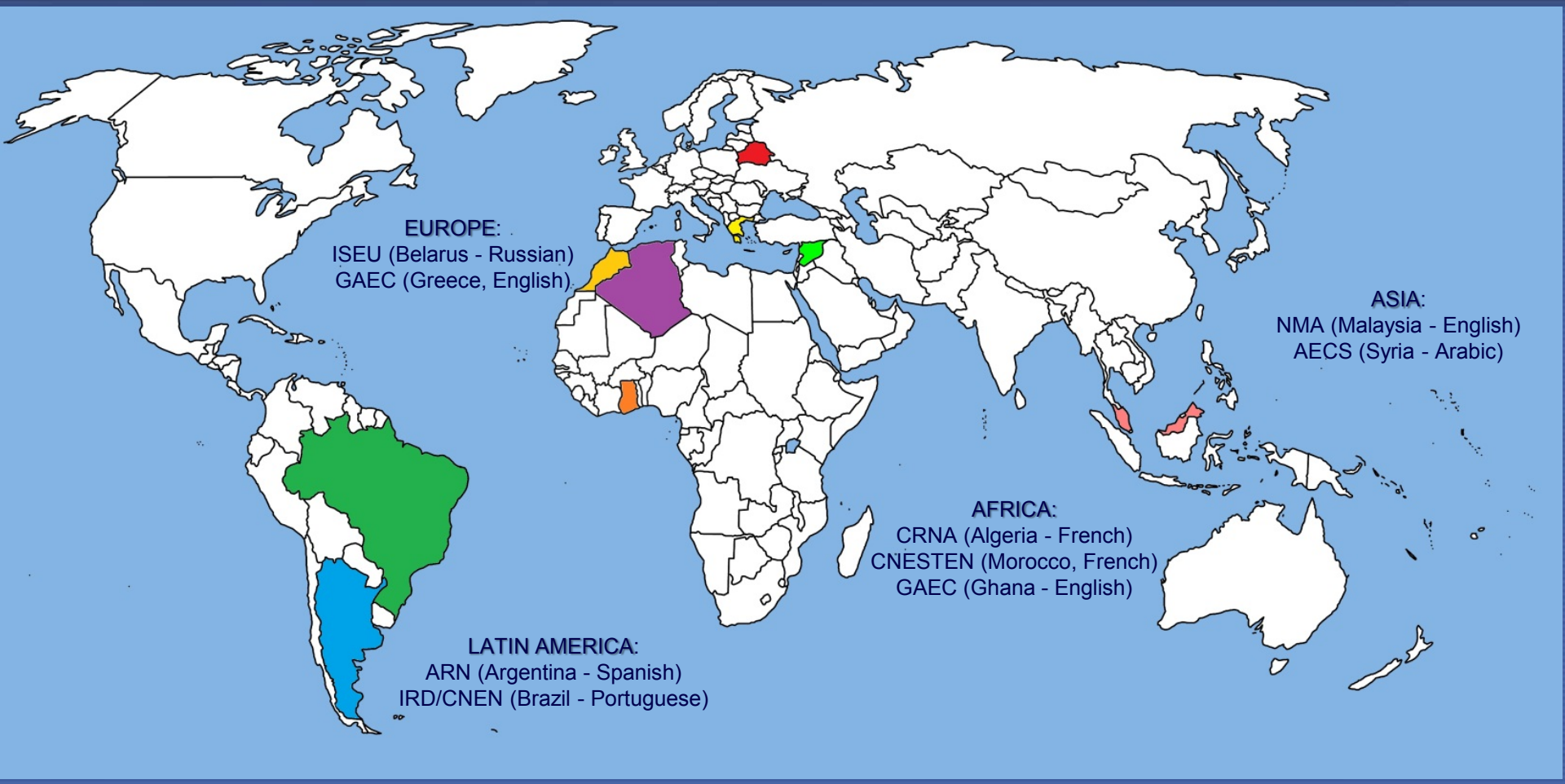
IAEA MECHANISMS AND ACTIVITIES TO SUPPORT STRENGTHENING RADIATION PROTECTION IN MEMBER STATES

IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020

- Train the Trainers
- Appraisal Missions
- Fellowships & Scientific Visits
- Specialized Training Courses
  - Regulators, operators, Medical staff
- Postgraduate Education Course in Radiation Protection and the Safety of Radiation Sources (PGEC)
- Training Radiation Protection Officers

IAEA + Regional Training Centres

IAEA Regional Training Centres



IAEA

IAEA MECHANISMS AND ACTIVITIES TO SUPPORT STRENGTHENING RADIATION PROTECTION IN MEMBER STATES

IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020

- Train the Trainers
- Appraisal Missions
- Fellowships & Scientific Visits
- Specialized Training Courses
  - Regulators, operators, Medical staff
- Postgraduate Education Course in Radiation Protection and the Safety of Radiation Sources (PGEC)
- Training Radiation Protection Officers

IAEA + Regional Training Centres

IAEA STRATEGY FOR EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020

IAEA Strategy for Education and Training in Radiation, Transport and Waste Safety 2011–2020

(Continuation of the 2001-2010 Strategy)

Strategy prepared by experts from Member States and endorsed by the IAEA General Conference

A steering committee of international experts in education and training advises the IAEA secretariat on implementation of the plan

IAEA

IAEA STRATEGY

IAEA Strategy for Education and Training in Radiation, Transport and Waste Safety 2011–2020

(Continuation of the 2001-2010 Strategy)

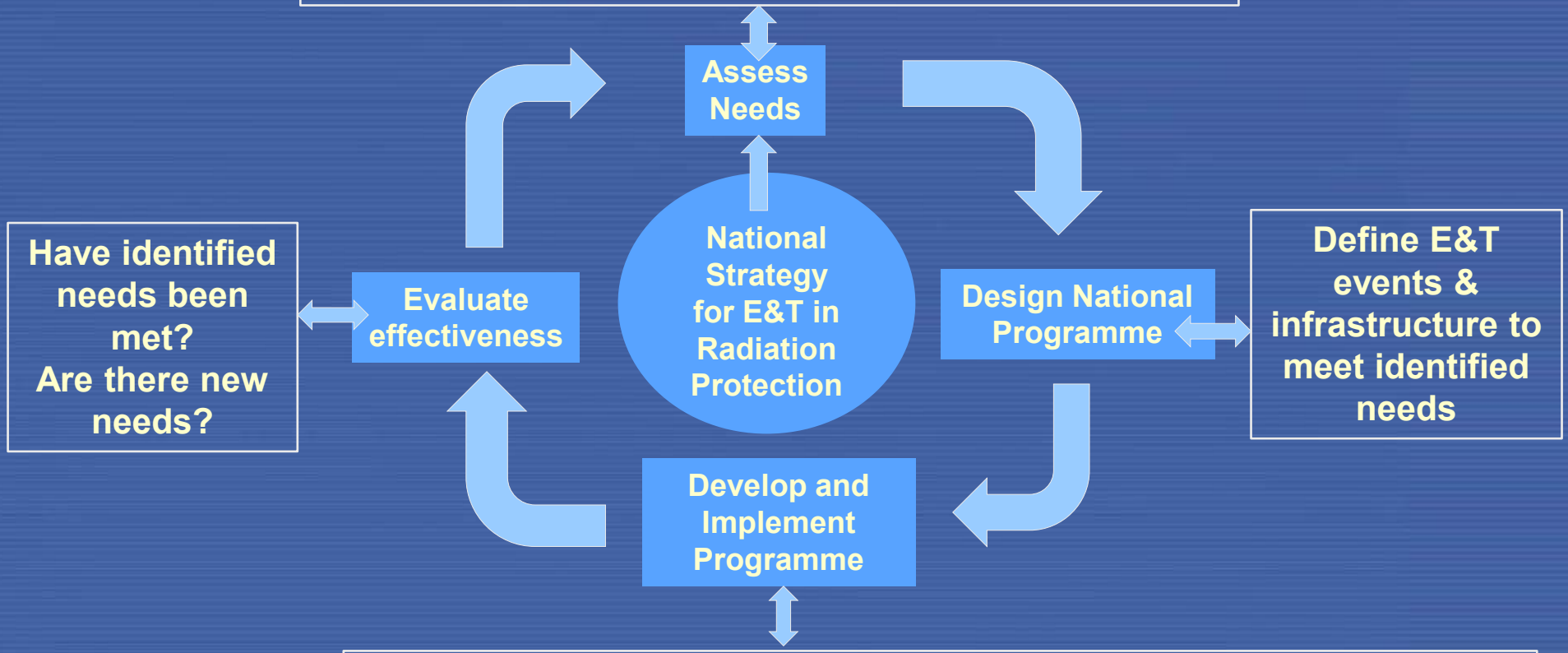
Objectives

- To strengthen radiation, transport and waste safety infrastructures through building competence in Member States (MSs)
- To facilitate the establishment of a national strategy for E&T in radiation, transport and waste safety in Member States
- To ensure that E&T programmes in MSs address the requirements of the IAEA safety standards

IAEA

ESTABLISHMENT OF A NATIONAL STRATEGY FOR EDUCATION & TRAINING IN RADIATION PROTECTION

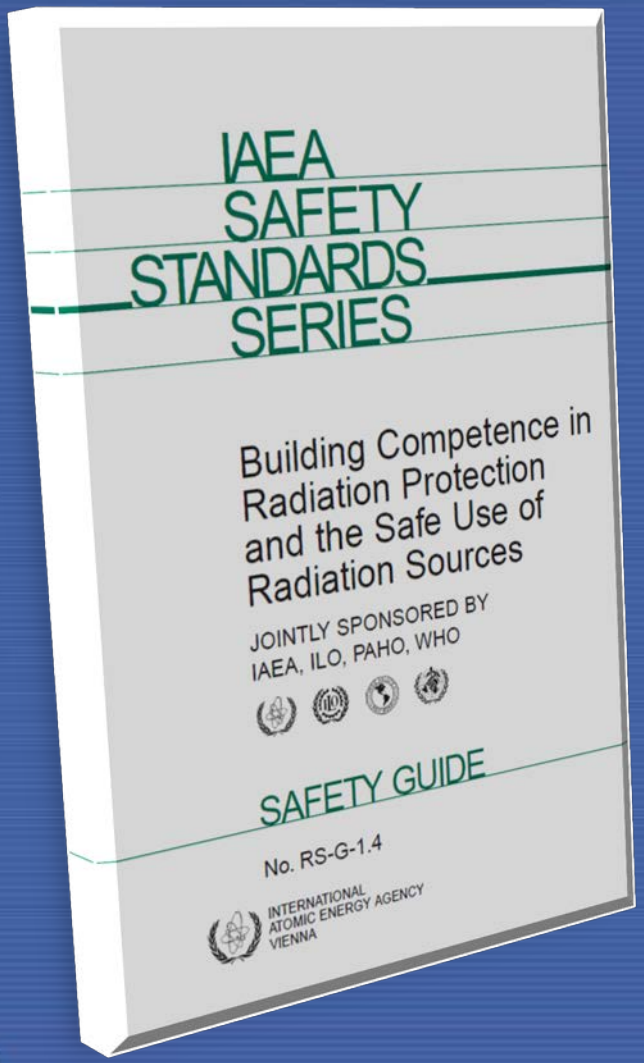
- Current and foreseeable facilities & activities
- No. of people to be trained
- Existing regulatory/professional E&T requirements

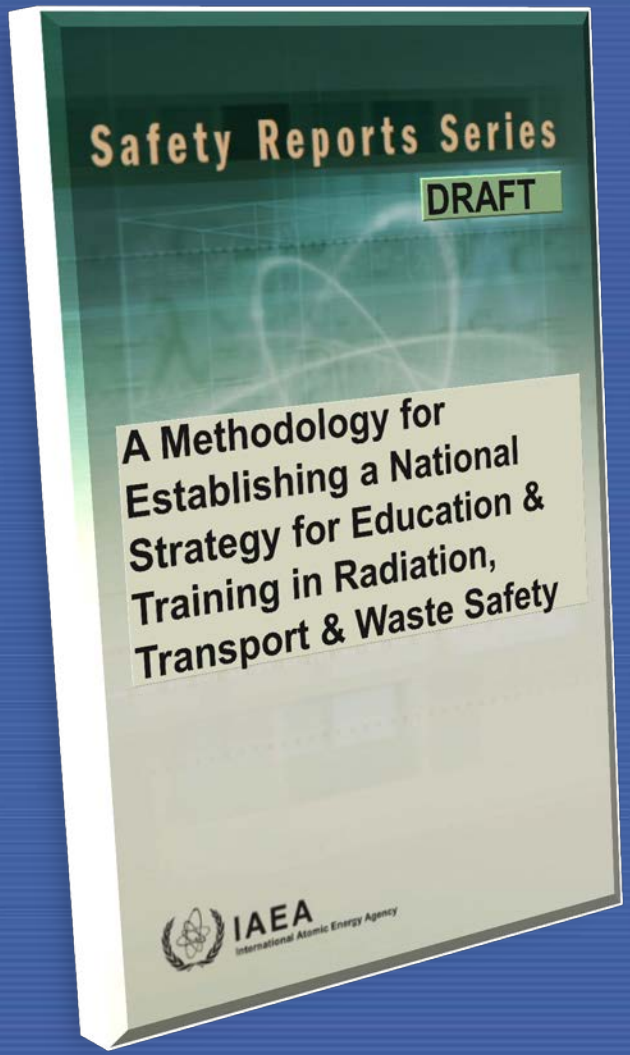


- Develop new/expand existing E&T programmes & infrastructure
- Consider outsourcing (international/regional/bi-lateral resources)
- Strengthen regulatory basis /professional requirements

IAEA

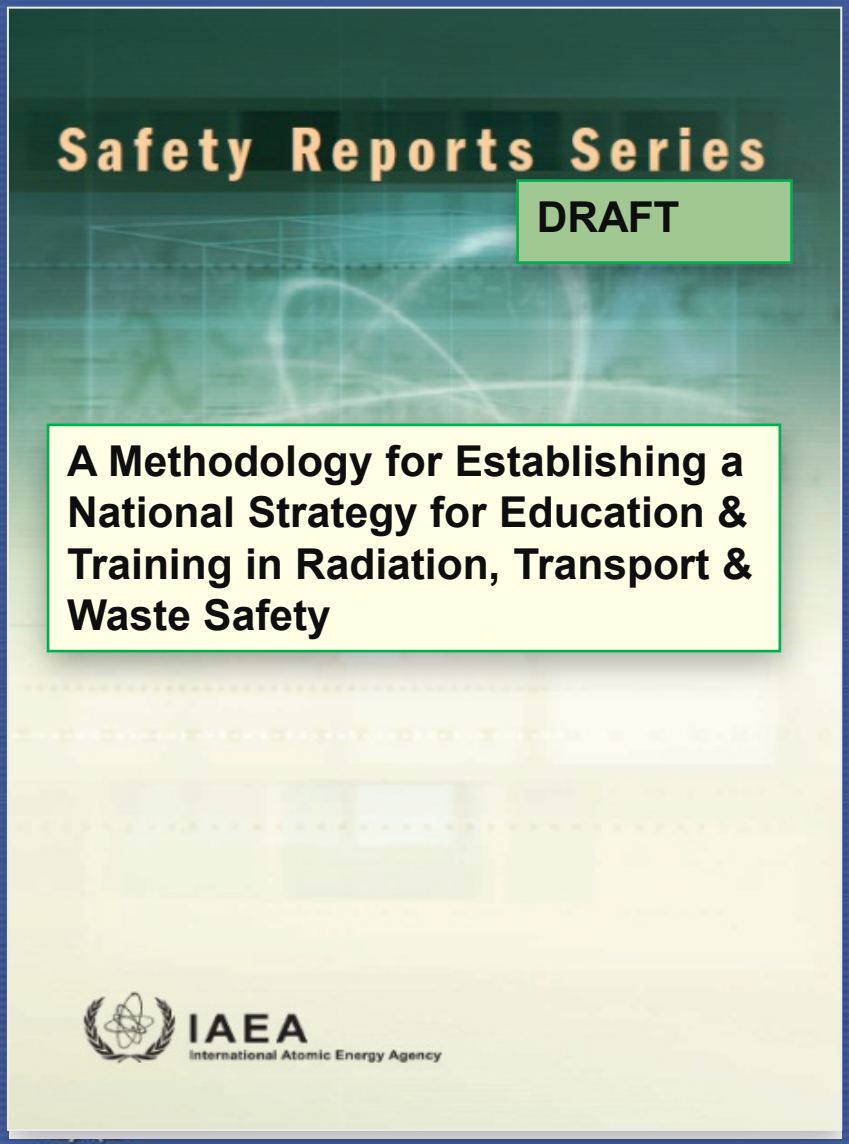
GENERAL FRAMEWORK & GUIDANCE FOR DEVELOPING A NATIONAL STRATEGY





IAEA

GUIDANCE HOW TO DEVELOP & IMPLEMENT A NATIONAL STRATEGY FOR E&T



ANNEX I. CASE STUDY 18
ANNEX II. OVERVIEW OF ACTIONS FOR ESTABLISHING A NATIONAL STRATEGY FOR EDUCATION AND TRAINING IN RADIATION, TRANSPORT AND WASTE SAFETY 45
ANNEX III. SUMMARY OF IAEA REQUIREMENTS AND RECOMMENDATIONS FOR EDUCATION AND TRAINING IN PROTECTION AND SAFETY 51

Annex I:

- illustrates the practical application of the guidance for a hypothetical country
- helps to visualize the implementation of the various steps of the process in a practical way.

IAEA STRATEGY: MAIN PLAYERS

Main Player	IAEA	Regional Training Centres	Member States
Stage	Stage I: Preparation	Stage II: Promotion	Stage III: Implementation
Activity	Preparation of competence building tools and guidance on 'how' to establish a nation strategy for E&T	Dissemination and promotion of tools and guidance to MS in the region	Development & implementation of national strategies in Member States

IAEA

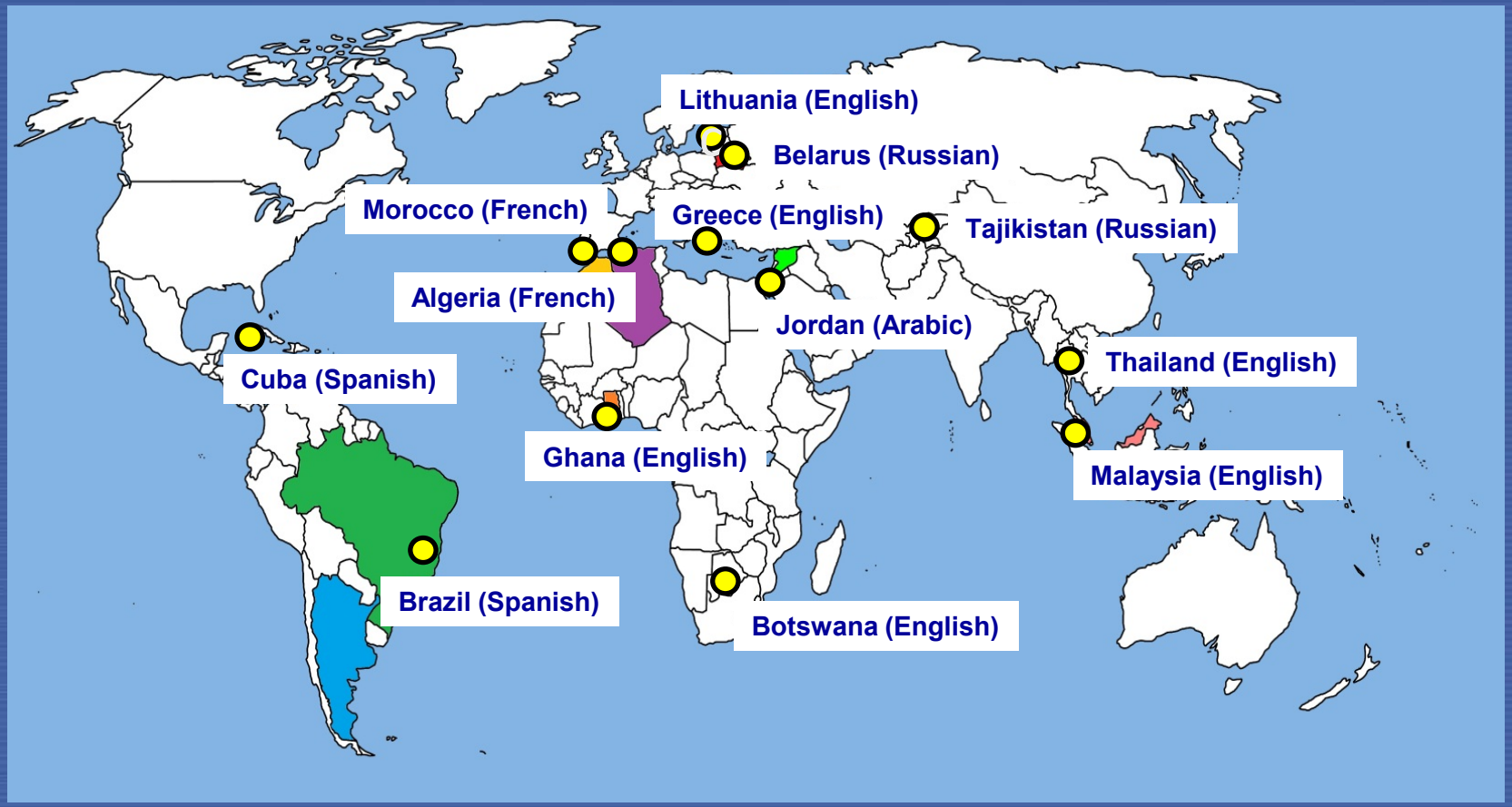
IAEA Regional Workshops on National Strategies

Objectives:

- To provide MSs with a general understanding of the IAEA guidance on the methodology
- To familiarize MSs with the relevant IAEA's safety standards
- To facilitate collection of national information for the development of national strategies

Regional Workshops on National Strategies 2012 & 2013

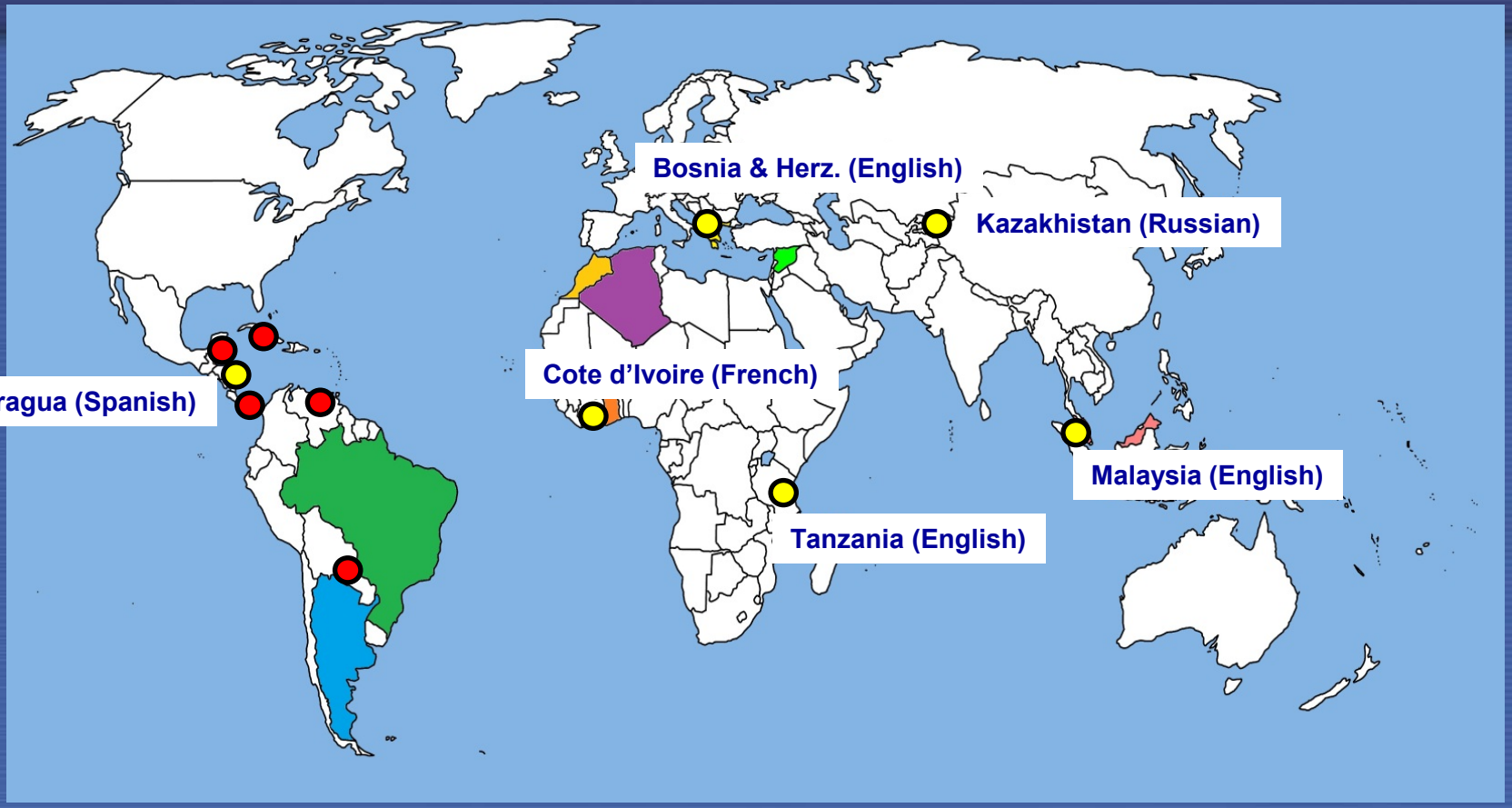
Hosted in 13 Countries in 5 Languages (Arabic, English, French, Russian & Spanish)



176 participants from 95 Member States

IAEA

Workshops on National Strategies Planned for 2014

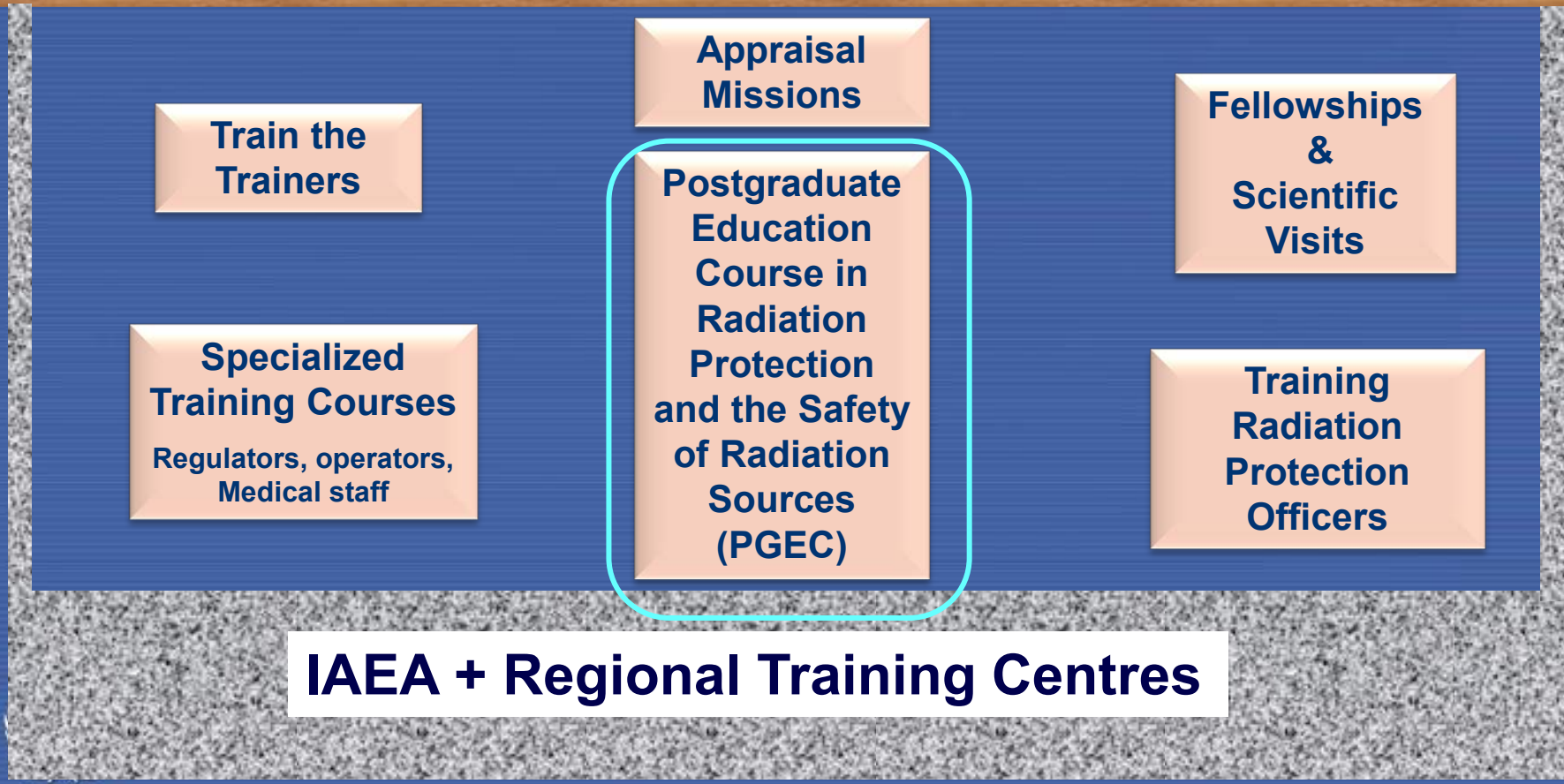


- 6 Regional workshops (Africa, Asia, Europe, Latin America)
- 5 National seminars in Spanish (Cuba, Paraguay, Venezuela, Guatemala)

IAEA

IAEA MECHANISMS AND ACTIVITIES TO SUPPORT STRENGTHENING RADIATION PROTECTION IN MEMBER STATES

IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020



POST-GRADUATE EDUCATIONAL COURSES IN RADIATION PROTECTION AND SAFETY OF RADIATION SOURCES

- **Aim**

  To meet the initial education & training needs of young professionals in radiation protection and the safety of radiation sources

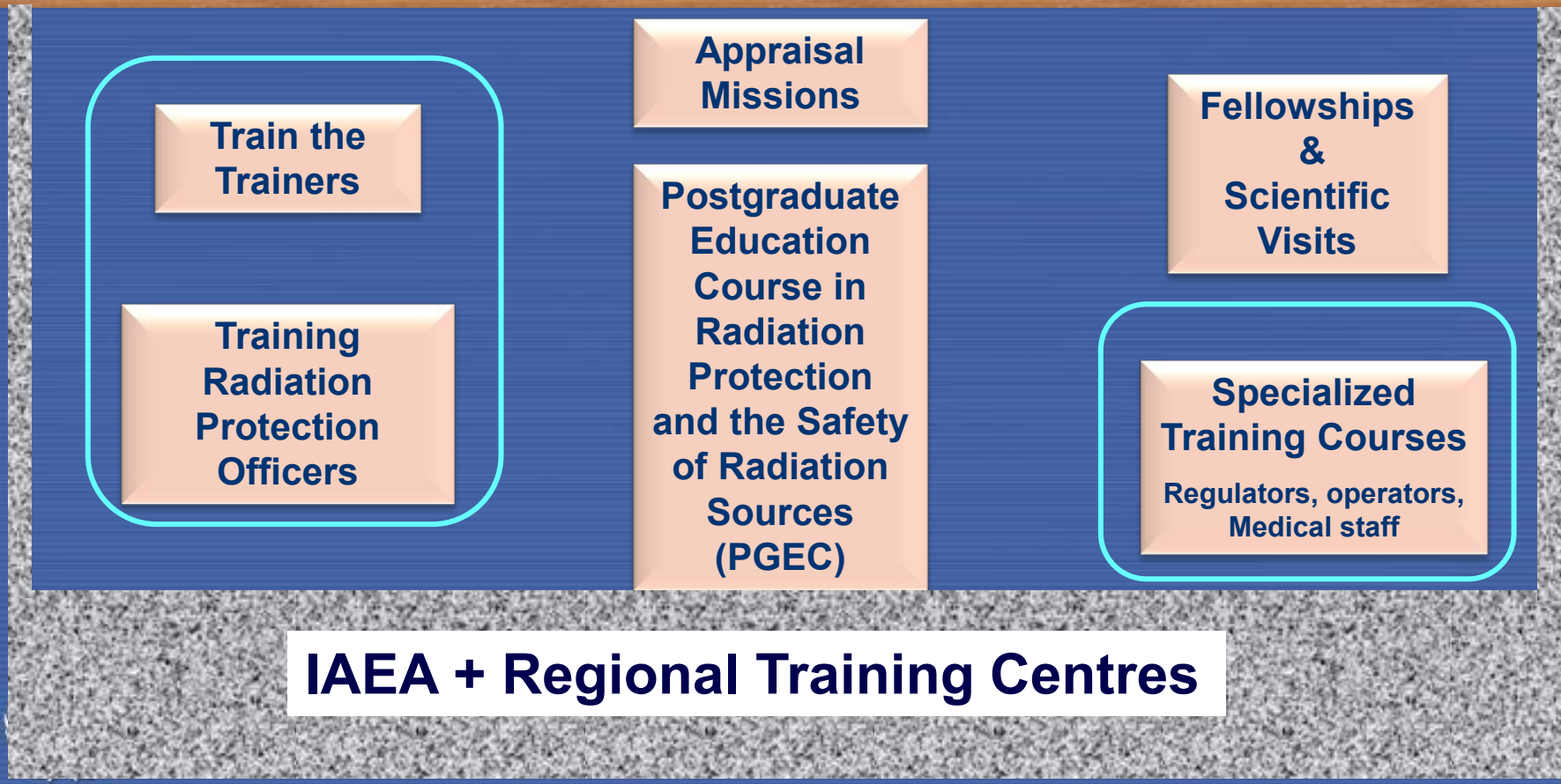
- **Participants**

  Science/engineering graduates and have been selected to work in the field of radiation protection and safety of radiation sources

- 24 Weeks duration
- Hosted by IAEA Regional Training Centres
- Learning material available in Arabic, English, French, Russian & Spanish

IAEA MECHANISMS AND ACTIVITIES TO SUPPORT STRENGTHENING RADIATION PROTECTION IN MEMBER STATES

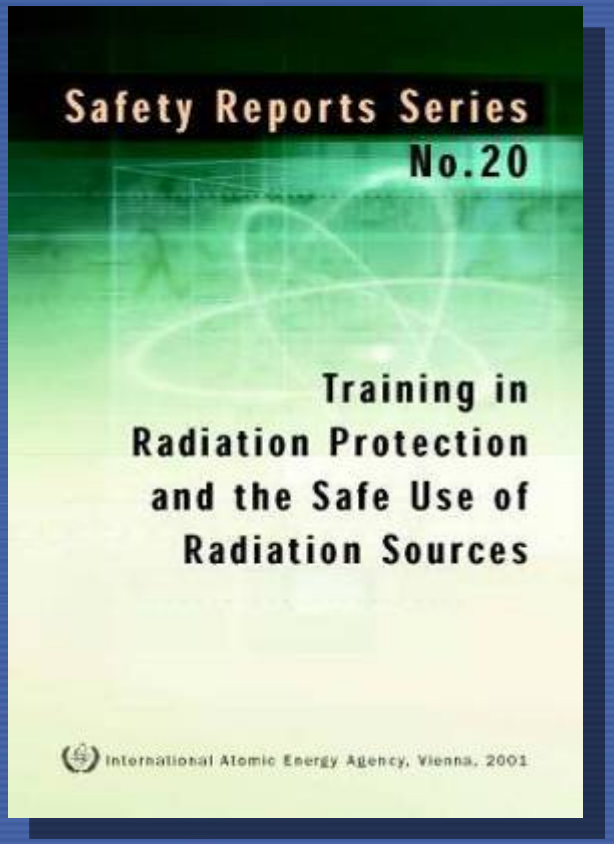
IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020



IAEA COMPETENCE BUILDING TOOLS

Specialized Training Courses

- Focused on specific target audience or specific subject (e.g. radiation safety in industrial radiography, radiation protection in cardiology)
- Short duration, typically 1 week
- Provide in-depth knowledge
- Participants
  - Regulators, health professionals, technical staff, radiation protection professionals



IAEA

IAEA School for Drafting Regulations

Target Audience: State Regulators

Aims:

- To develop / improve national safety regulations
- To share experience with other countries
- Member States to take ownership and responsibility for development of regulations

Principles of operation:

- Few lectures on key concepts, followed by long drafting sessions
- Group review of produced drafts
- Modular in scope and duration (radiation safety/waste management, etc)
- Duration 1 – 4 weeks (depending on scope)

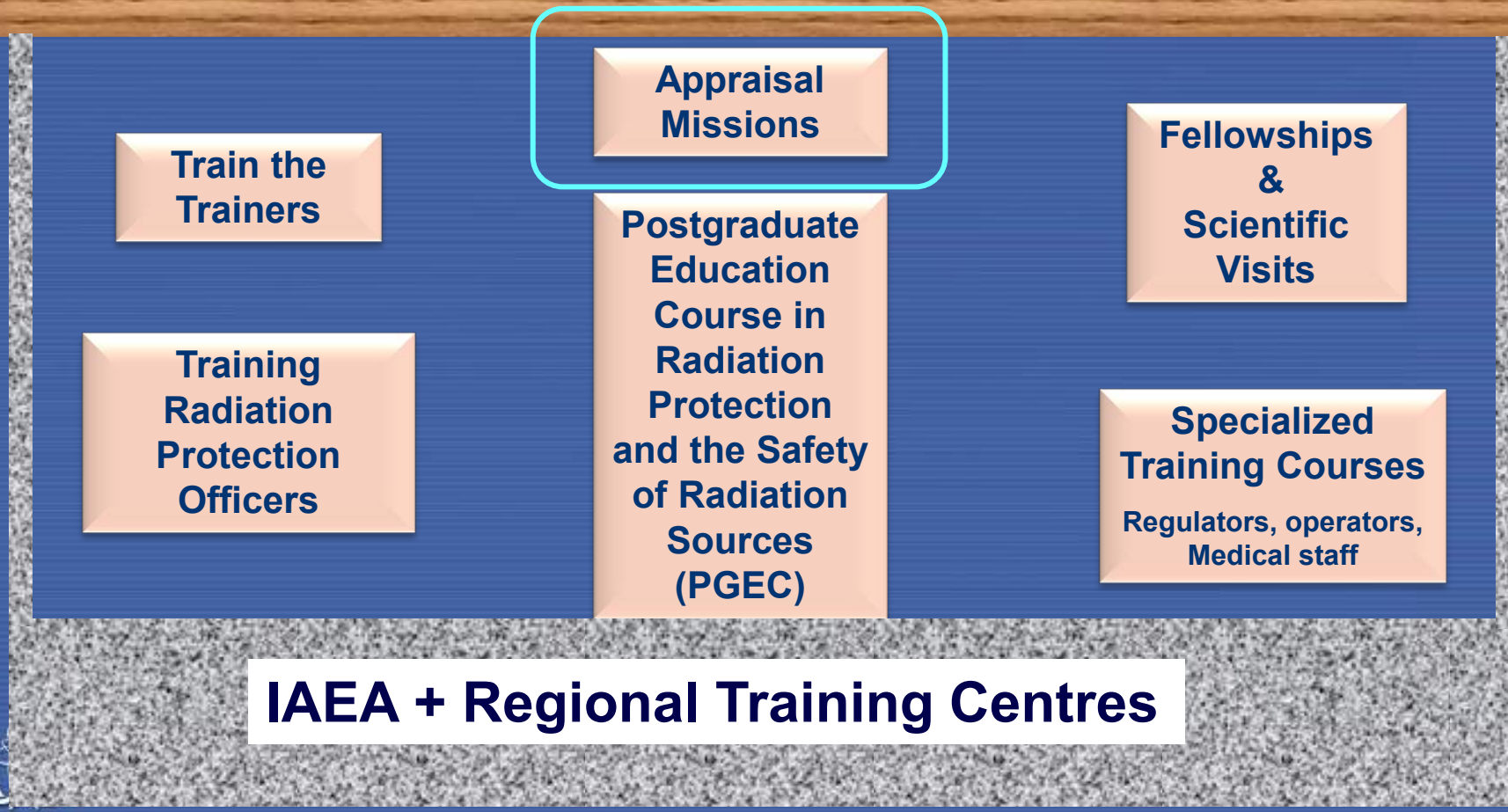
Feedback and Outlook

- 3 Schools in Europe, 1 School in Asia, 2 Schools in Africa, very well received
- Future: more schools, increased follow up activities

IAEA

IAEA MECHANISMS AND ACTIVITIES TO SUPPORT STRENGTHENING RADIATION PROTECTION IN MEMBER STATES

IAEA STRATEGIC APPROACH TO EDUCATION AND TRAINING IN RADIATION, TRANSPORT & WASTE SAFETY 2011-2020



IAEA'S EDUCATION & TRAINING APPRAISAL SERVICE (EduTA)

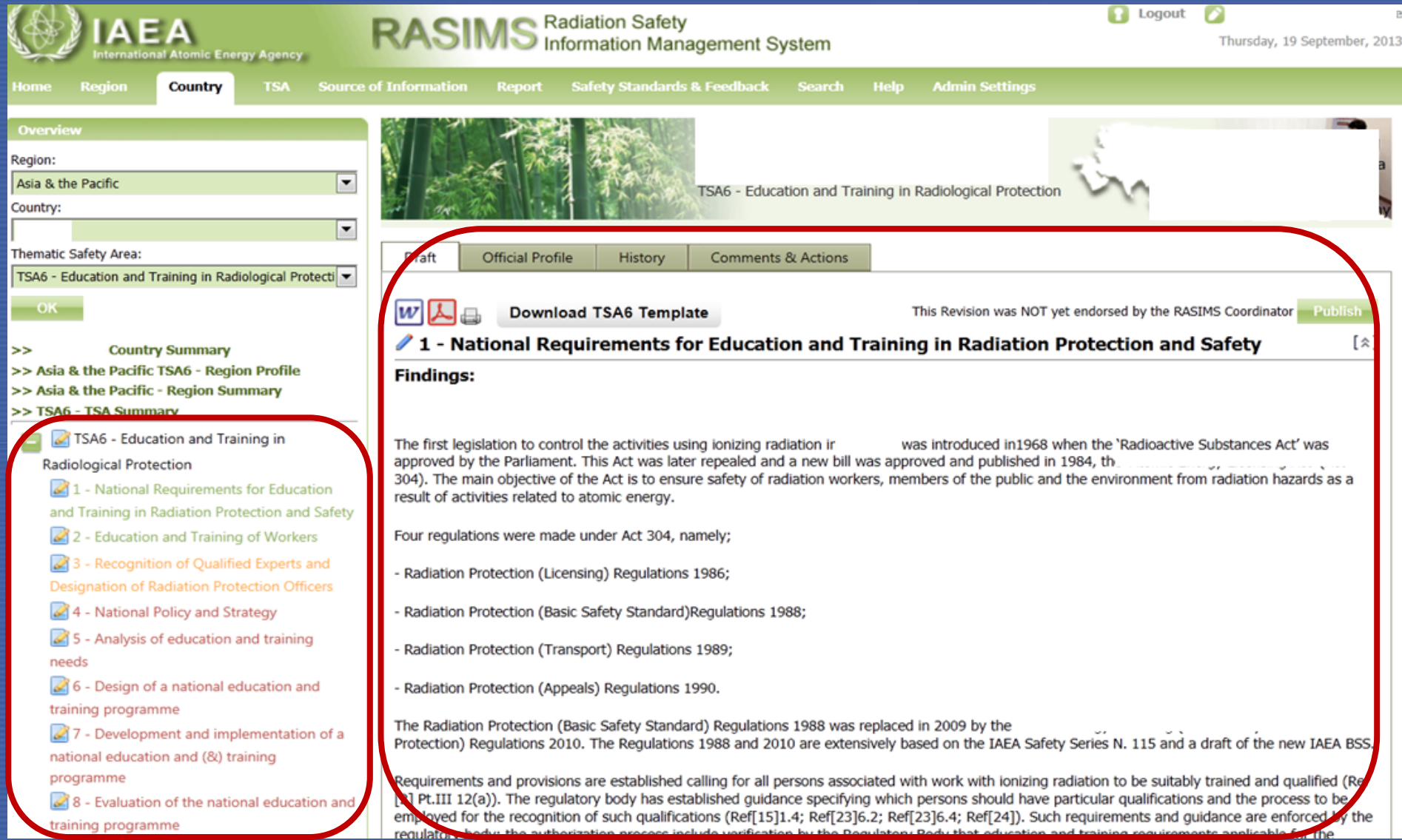
- Peer review of national provisions for E&T in radiation protection
- Based on self-assessment against IAEA Safety Standards
- Report suggests opportunities for improvement

Countries hosting EduTA include:
Algeria, Argentina, Belarus, Brazil, Egypt, Ghana, Greece, Korea, Malaysia, Morocco, Singapore, South Africa.

EduTA mission to Malaysia 2011

IAEA

Monitoring E&T in Radiation Safety in Member States Information Management System (RASIMS) http://rasims.iaea.org



Monitoring E&T in Radiation Safety in Member States Information Management System (RASIMS) http://rasims.iaea.org

IAEA International Atomic Energy Agency

RASIMS Radiation Safety Information Management System

Home | Region | Country | TSA | Source of Information | Report | Safety Standards & Feedback | Search | Help | Admin Settings

Go to

Region:

Country:

Thematic Safety Area:

OK

Inbox

No Requests

RASIMS E-Learning - Updated to Version 1.1

The RASIMS E-Learning Module enables Member States easily to understand and to use the functionality of RASIMS. As RASIMS is a dynamic system and new features and modifications are released frequently, new topics and tutorial videos will be added as soon as the new features are available.
Choose one of the preferred versions PC or iPad and dive into the tutorials of Thematic Safety Areas and RASIMS functionality.
The current implementation is in beta release and any feedback is welcomed!

- **Click here for the PC version**
- **Click here for the iPad version**
- **Click here to download RASIMS TSA slides**
- **Click here to download the e-Learning Module in PDF format**

Accessible on public page of RASIMS

What is RASIMS?

RASIMS is a web-based platform that enables Member States and the IAEA Secretariat to jointly collect, analyse and view information regarding the national infrastructure for radiation and waste safety. In addition to facilitating the identification of national and regional needs, the information in RASIMS is used for a range of other purposes including the design of new technical cooperation (TC) projects and during the radiation safety clearance process prior to the provision of radiation sources to Member States. RASIMS is therefore focussed on Member States that are receiving assistance from the Agency, although all Member States are welcome to provide data on their national infrastructure. Member States can also use RASIMS to provide the Secretariat with feedback on IAEA Safety Standards.

The information in RASIMS is grouped into Thematic Safety Areas (TSA) to ensure that all aspects of the relevant Safety Standards are covered in a comprehensive and consistent manner.

SUMMARY

- IAEA General Conference has called upon MS to develop national strategies for education &training radiation, transport & waste safety
- IAEA has developed guidance, and is providing support to MSs
- IAEA Regional Training Centres are key partners with IAEA

IAEA

Thank you for your attention

Please visit our home page: www-ns.iaea.org/training/rw/

IAEA.org International Atomic Energy Agency

NS IAEA

Search this site

About Us Who We Are | Our Work What We Do | News Center Latest from IAEA | Publications Books and Reports | Nucleus Specialized Resources

Nuclear Safety & Security

Nuclear Energy | Nuclear Applications | Safeguards | Technical Cooperation

- Nuclear Safety & Security
- Safety & Security Framework
- Technical Areas
- Services for Member States
- Safety & Security Publications
- Conventions & Codes
- Training
  - Home page
  - Events calendar
  - Incidents & emergencies
  - Nuclear installation safety
  - Nuclear security
  - Radiation, transport & waste
- Meetings
- Special projects

Education and Training in Radiation, Transport and Waste Safety

Building competence through education and training in radiation safety is fundamental to the establishment of a comprehensive and sustainable national infrastructure for radiation safety, which in turn is essential for protecting people from the harmful effects of radiation. In order to establish a sustainable education and training infrastructure in radiation, transport and waste safety, Member States should develop a national strategy for building competence through education and training , based on

Resources

Educational and training material

Education and Training Appraisals (EduTA)