



# Education, Training and the EURATOM Research Programme

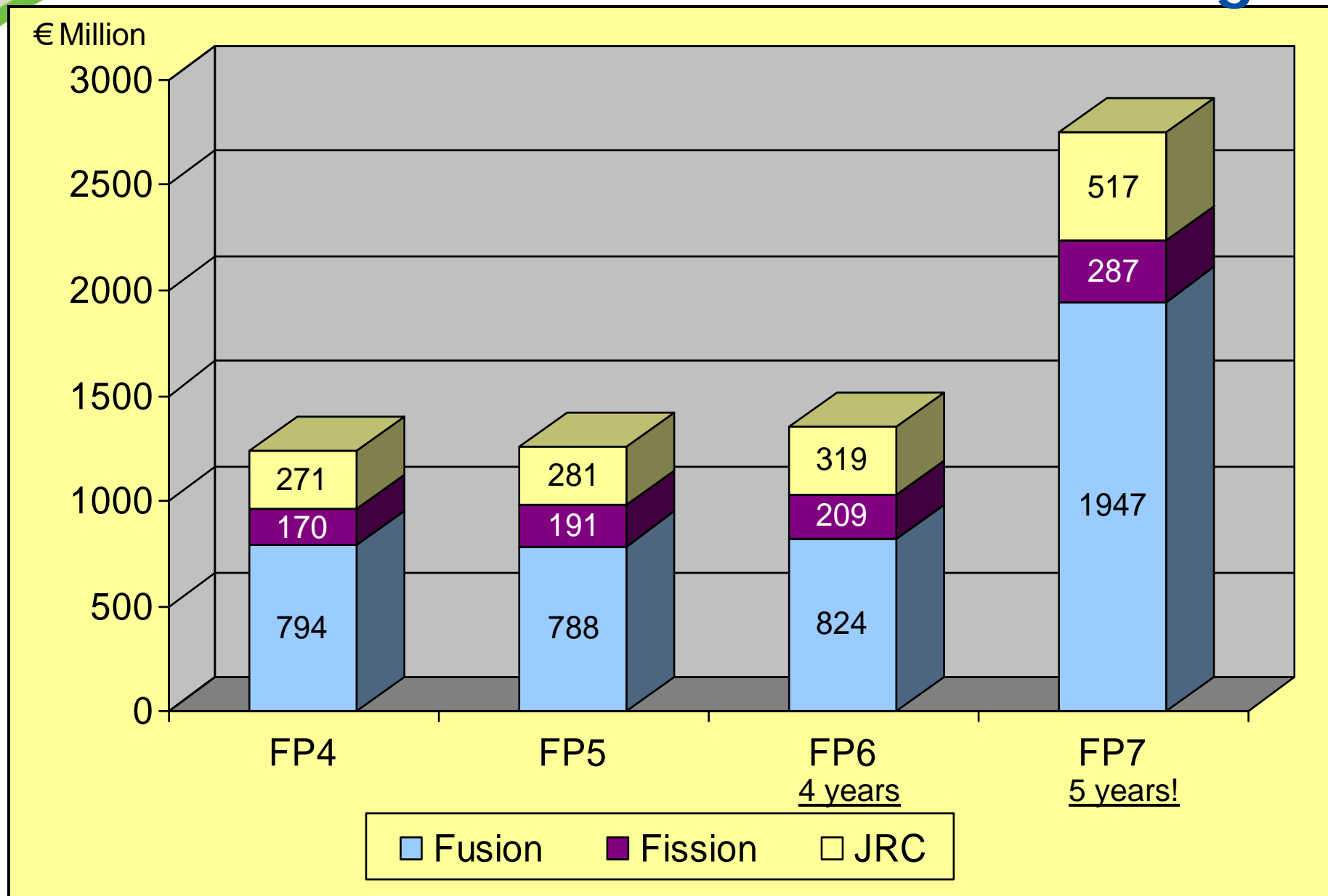
**André JOUVE, Georges VAN GOETHEM**  
**Scientific Officers**  
**European Commission**  
**Directorate-General for Research**  
**Directorate J – Energy (EURATOM)**  
**Unit J.2 - Fission**



# Art 4 of the EURATOM TREATY

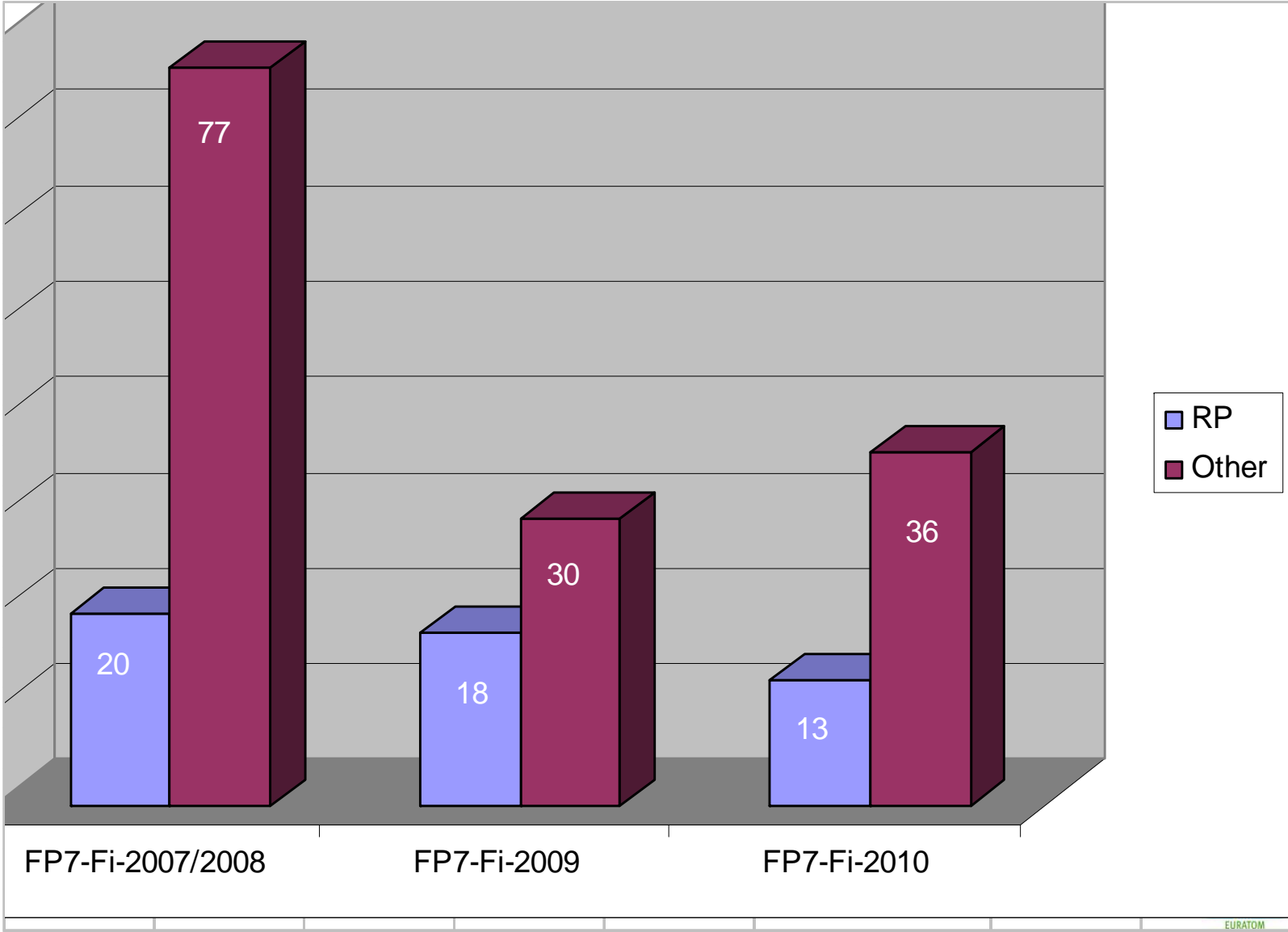
"The Commission shall be responsible for promoting and facilitating nuclear research in the Member States and for complementing it by carrying out a Community research and training programme"

# Euratom research budget



# Radiation Protection and other thematic areas

€ Million



# Radiation Protection Main Fields in FP7 (2007-2011)

- Low dose risk research
- Medical uses of radiation
- Emergency management
- Other areas – integration of national research activities

# Pursued goals

- Acquisition and transfer of knowledge
- availability of qualified researchers, engineers and technicians in the long-term
- Mobility of students and scientists

# EURATOM approach

- MODULAR COURSES AND COMMON QUALIFICATION APPROACH
- ONE MUTUAL RECOGNITION SYSTEM ACROSS THE EU
- MOBILITY FOR TEACHERS AND STUDENTS ACROSS THE EU
- FEEDBACK FROM "STAKEHOLDERS", BOTH PUBLIC AND PRIVATE

# INSTRUMENTS

- Imbedded training in research projects
- European Fission Training Schemes
- Strategic Research Agendas



# STRATEGIC RESEARCH AGENDAS

- Sustainable Nuclear Energy  
Technology Platform
- Multidisciplinary European Low Dose  
Initiative
- Implementing Geological Disposal  
Technology Platform

# 6 fields of radiation protection research in the 7<sup>th</sup> Framework Programme

- Epidemiological studies
- Mechanistic studies
- Data bases and tissue banks
- Medical uses of radiation
- Emergency management
- Training

# Epidemiological studies

- **CHILD MED RAD** – feasibility of establishing prospective cohort of CT exposed infants/children
- **ARCH** – Strategic plan for Chernobyl research (<http://arch.iarc.fr>)

# Mechanistic studies

- **CARDIORISK** – the mechanisms of cardiovascular risk after low radiation doses ([www.cardiorisk.eu](http://www.cardiorisk.eu))

# DATA BASES and TISSUE BANKS

- **CTB** – Chernobyl Tissue Bank  
<http://www.chernobyltissuebank.com/>
- **STORE** – Sustaining access to tissues and data from radiobiological experiments

# Medical uses of radiation

- **ORAMED** – RP medical staff ([www.oramed-fp7.eu/](http://www.oramed-fp7.eu/))
- **ALLEGRO** – Risk to normal tissue from radiation therapy [www.allegroproject.eu](http://www.allegroproject.eu)
- Dedicated **BREAST CT** - feasibility and optimisation versus normal X ray procedures [www.imp.uni-erlangen.de/BreastCT/](http://www.imp.uni-erlangen.de/BreastCT/)
- **MADEIRA** – Optimisation of 3D images from nuclear medicine [www.madeira-project.eu](http://www.madeira-project.eu)
- **SEDENTEXCT** – Optimisation of cone beam CT in Dental application  
[www.sedentexct.eu/](http://www.sedentexct.eu/)

# Emergency management

- **DETECT** – Optimised systems for monitoring radiation in case of emergency

# Training

- **ENETRAP II** – European network on education and training in radiation protection



# ENETRAP II

## Specific objectives

- Develop the European radiation protection training scheme (ERPTS) for RPE training;
- **Develop a European reference standard for RPO training;**
- Develop and apply a mechanism for the evaluation of training material, courses and providers;
- **Establish a recognised and sustainable ERPTS "quality label" for training events;**
- Create a database of training events and training providers (including On-the-Job-Training) conforming to the agreed ERPTS;
- **Bring together national initiatives to attract early-stage radiation protection researchers on a European level;**
- Develop some course material examples, including modern tools such as e-learning;
- **Develop a system for monitoring the effectiveness of the ERPTS;**
- Organise pilot sessions of specific modules of the ERPTS and monitor the effectiveness according to the developed system;
- **Development of a European passport for Continuous Professional Development in Radiation Protection.**

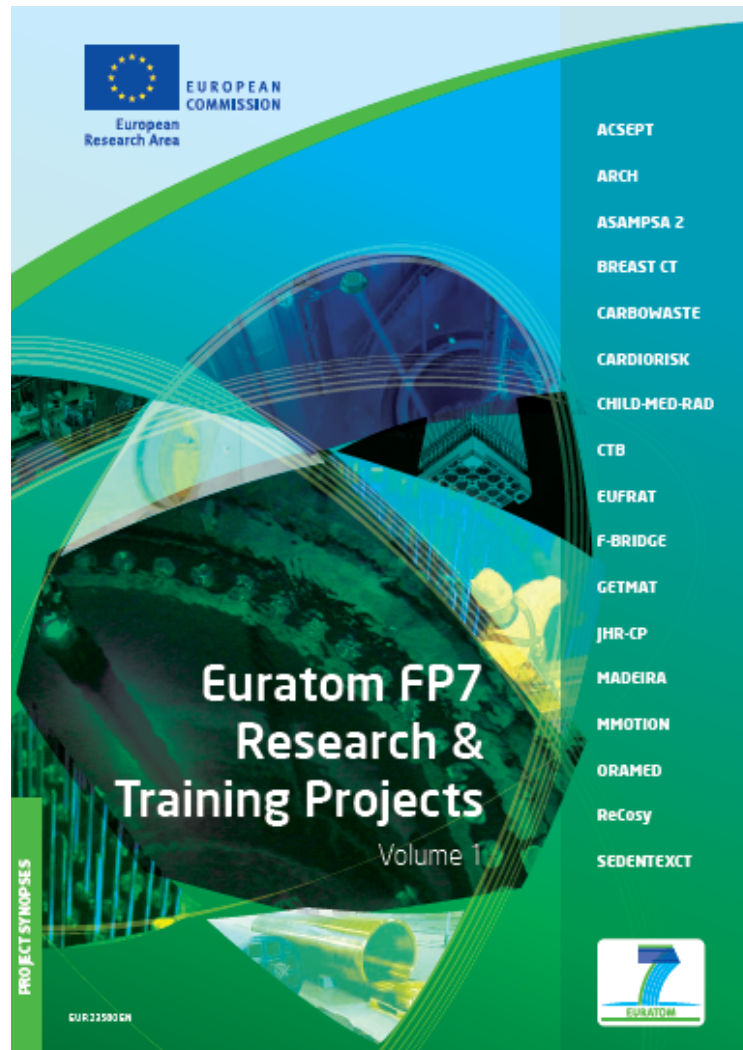
# Call FP7-Fission-2009 grants agreements under negotiation

- **DOREMI** :  
Low Dose Research towards Multidisciplinary  
Integration
- **SOLO** :  
Epidemiological Studies of Exposed Southern  
Urals Populations



# Euratom project summary

## EUR 23580 EN



# Call FP7-Fission-2010

- **Contribution to low-dose risk research in Europe**
- **Optimisation of doses from new technologies in medical imaging**
- **European platform on emergency and post-accident preparedness and management**
- **An integrated approach to radioecology research in Europe**
- **Transnational access to large infrastructures**
- **Euratom Fission Training Schemes (EFTS) in nuclear energy and radiation protection**
- **Actions supporting programme implementation and other activities**

# Examples of EC contribution to imbedded training

- **NOTE (FP6) – Non Targeted Effects**  
some staff is Ph.D. or Post-doc students  
in addition to 300 000 € EC contribution for training activities
- **CARDIORISK (FP7) : the mechanisms of cardiovascular risk after low radiation doses**  
30% of staff is Ph.D. or Post-doc students  
in addition to 140 000 € EC contribution for training activities
- **MADEIRA (FP7) : Optimisation of 3D images from nuclear medicine**  
60% of staff is Ph.D. or Post-doc students  
in addition to 140 000 € EC contribution for training activities

# Sources of further information on FP7 projects

## Low dose risk projects

- [http://cordis.europa.eu/fp7/euratom-fission/ev20070620\\_en.html](http://cordis.europa.eu/fp7/euratom-fission/ev20070620_en.html)

## – Catalogues of projects

- [http://ec.europa.eu/research/energy/pdf/euratom\\_fp6\\_projects\\_training\\_vol3\\_eur22385\\_en.pdf](http://ec.europa.eu/research/energy/pdf/euratom_fp6_projects_training_vol3_eur22385_en.pdf)
- [http://ec.europa.eu/research/energy/pdf/nuclear\\_fission\\_2\\_en.pdf](http://ec.europa.eu/research/energy/pdf/nuclear_fission_2_en.pdf)
- [http://ec.europa.eu/research/energy/pdf/nuclear\\_fission\\_en.pdf](http://ec.europa.eu/research/energy/pdf/nuclear_fission_en.pdf)

# Conclusions

- **E&T form an indivisible package with research**
- **E&T in radiation protection has a broad social impact, beyond energy policy, and applies to all MS**
- **It goes along with harmonisation of RP in Europe**
- **In addition to Euratom Fission Training Schemes, the main contribution of research to E&T is the imbedded training of Ph.D. and Post-doc students directly participating in the projects**