



Overview of JRC's Nuclear Safety, Safeguards and Security Activities



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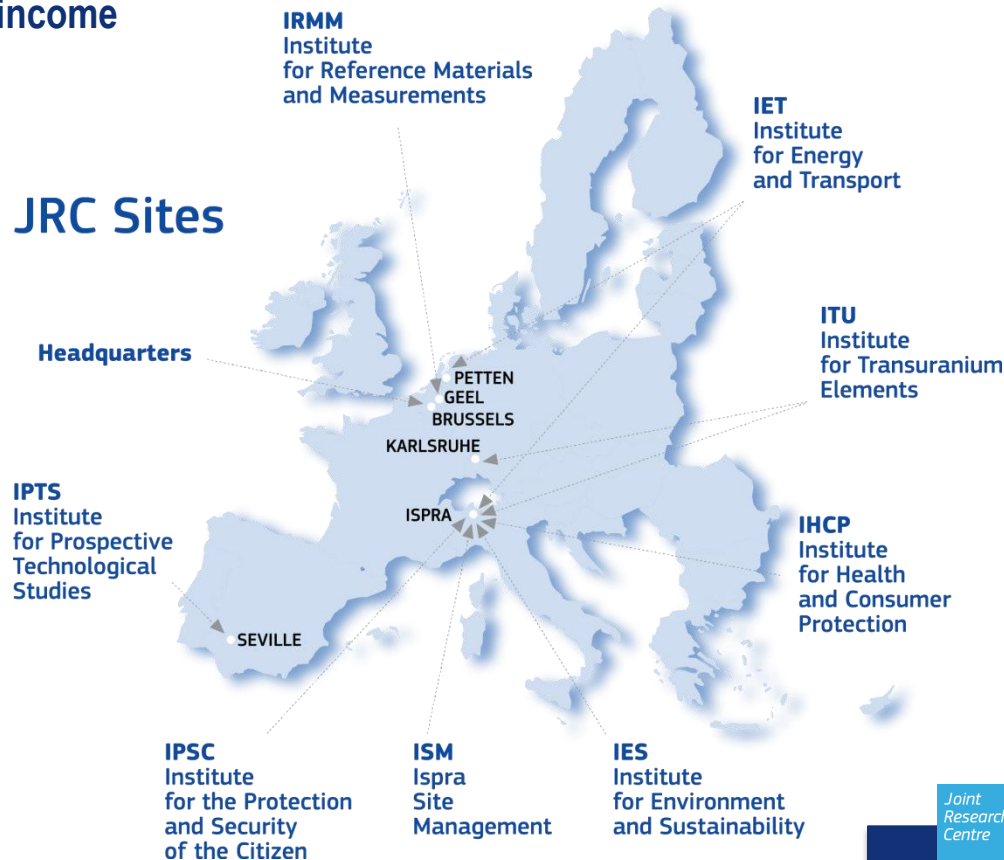
High Level Workshop Launching the NEA NI2050. 7 - 8 July 2015

JRC at a glance



- Established 1957
- **7 institutes** in **5 locations**
- **around 3000 staff**
- **1200-1400 scientific publications**
- Budget: around **€393 million** annually, plus **€73 million** earned income

JRC Sites



JRC Institutes

- **IRMM** – *Geel, Belgium*
Institute for Reference Materials and Measurements
- **ITU** – *Karlsruhe, Germany, and Ispra, Italy*
Institute for Transuranium Elements
- **IET** – *Petten, The Netherlands, and Ispra, Italy*
Institute for Energy and Transport
- **IPSC** – *Ispra, Italy*
Institute for the Protection and Security of the Citizen
- **IES** – *Ispra, Italy*
Institute for Environment and Sustainability
- **IHCP** – *Ispra, Italy*
Institute for Health and Consumer Protection
- **IPTS** – *Seville, Spain*
Institute for Prospective Technological Studies

Objectives of the JRC research

(a) Improve nuclear safety including: fuel and reactor safety, waste management and decommissioning, and emergency preparedness

(b) Improve nuclear security including: nuclear safeguards, non-proliferation, combating illicit trafficking, and nuclear forensics

(c) Raising Excellence in the nuclear science base for standardisation

(d) Foster knowledge management, education and training

(e) Support the policy of the Union on nuclear safety and security and the related evolving Union legislation



Highlights



- ❖ *"Clearinghouse"* Operational Experience Feedback
- ❖ Materials research for plant life extension
- ❖ Euratom Generation IV International Forum coordination and scientific research
- ❖ Safety limits of nuclear fuel in normal, transient and accident conditions (current and innovative). Long-term behaviour under storage and disposal conditions.
- ❖ Modelling of severe accidents, source term, environmental monitoring, dispersion
- ❖ Enhanced methods and technologies to prevent, detect and respond to nuclear and radioactive material misuse
- ❖ Nuclear data and nuclear reference materials
- ❖ Research, training and education for decommissioning and waste management
- ❖ Nuclear education, training and knowledge management
- ❖ International cooperation

Infrastructure

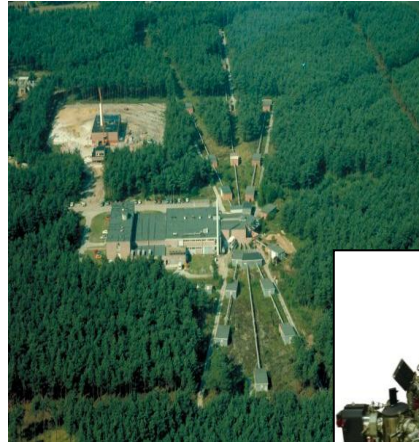


AMALIA lab

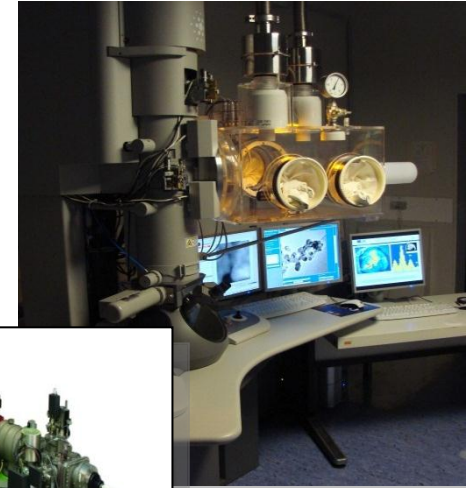
Van de Graaff



HFR



GELINA



Transmission electron microscopy



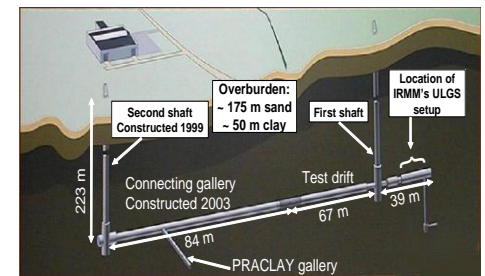
Large geometry secondary ion mass spectrometry (SIMS)



Hot cells (24)



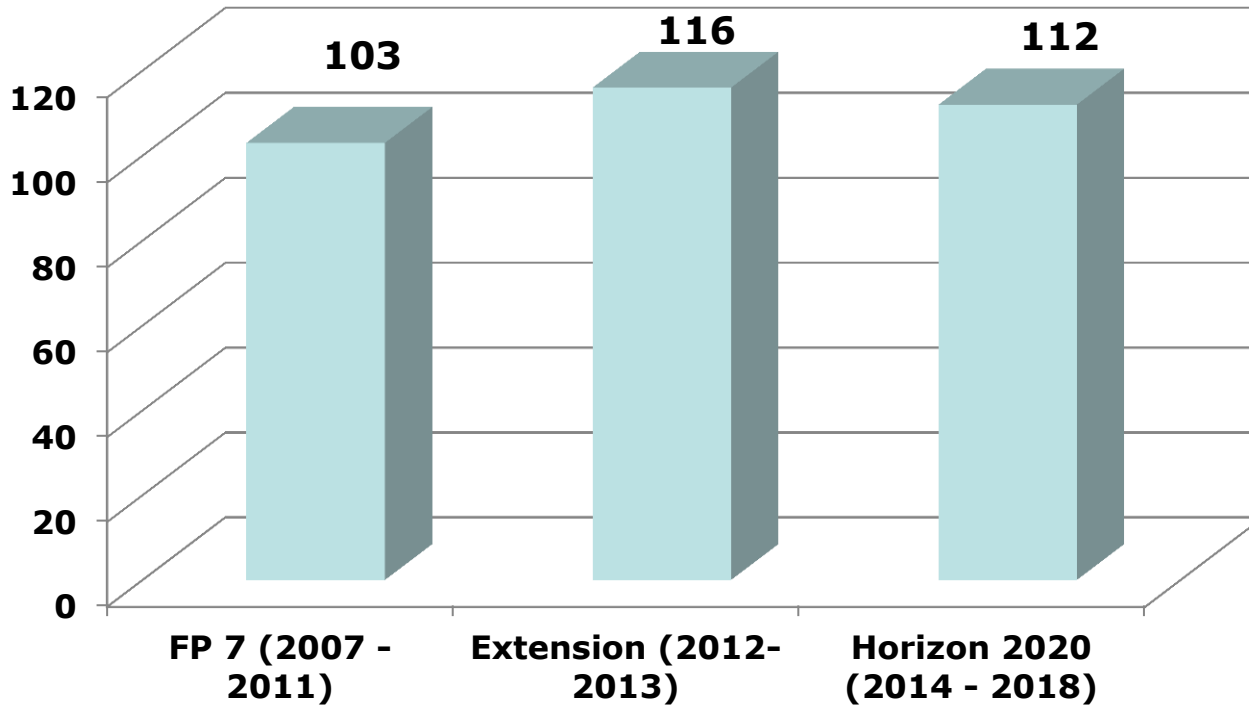
Solid state NMR



Budget



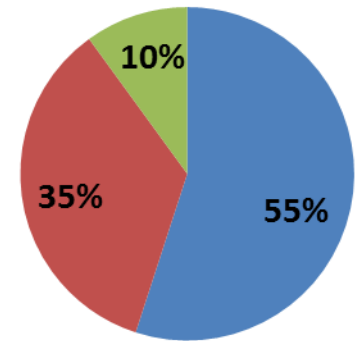
Annual budget



■ M€

Distribution

- SAFETY
- SECURITY AND SAFEGUARDS
- EDUCATION AND TRAINING



For more information

<https://ec.europa.eu/jrc/en/publication/science-nuclear-safety-and-security>

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**Thank you for your
attention!**