

# From Nuclear Science to Industry: Effective Strategies and Initiatives

Marco Ripani

Istituto Nazionale di Fisica Nucleare, Italy

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**Nuclear Technology for  
the Sustainable Development Goals**

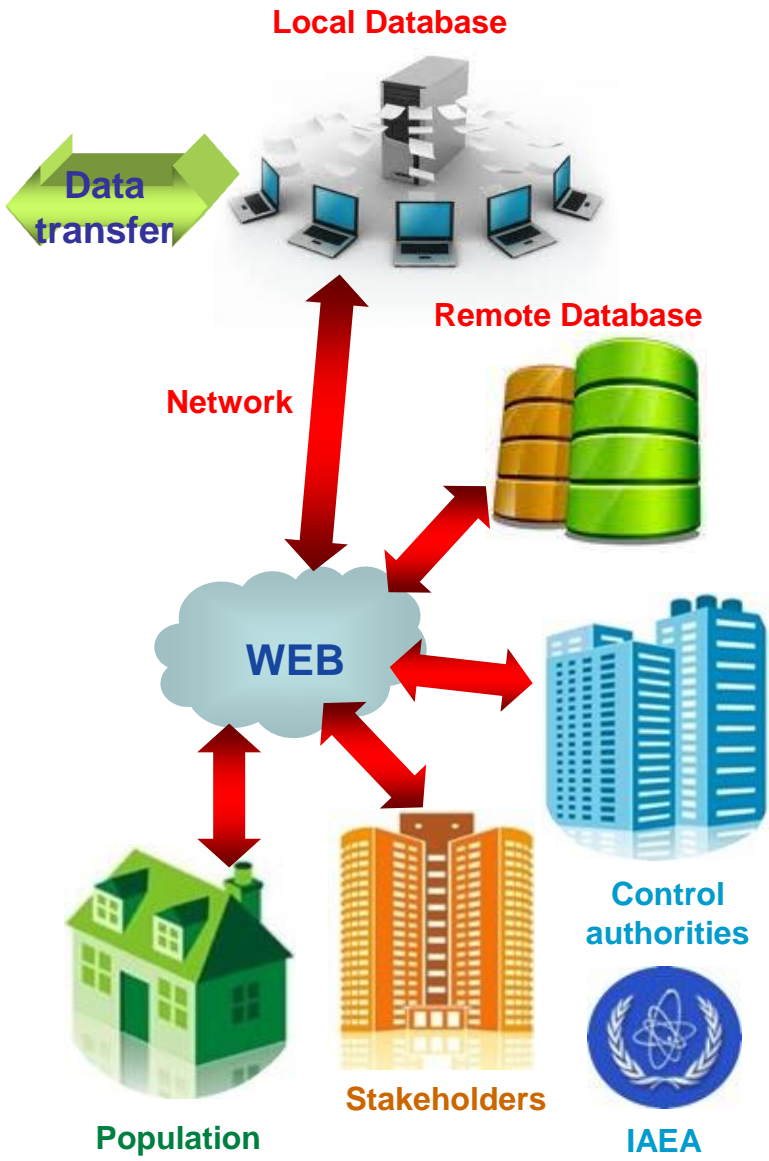


# Decommissioning and waste management



Drum monitoring network...

- Cooperation between INFN and Ansaldo Nucleare, SOGIN companies
- Participation to discussion about pan-European program on final disposal



# "Smart" radiation detectors



- Prototypes being realized by INFN for SOGIN company



Local Database



Network



Miniaturized radiation detectors for mobile devices...  
involvement of small electronics company

Innovative radiation dose devices...  
talks with industry ongoing



# Inspections

Detecting “orphan” sources in scrap metal

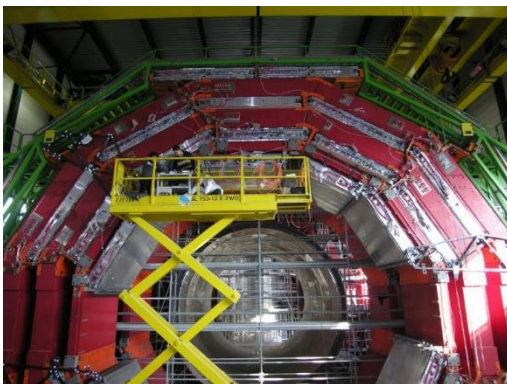
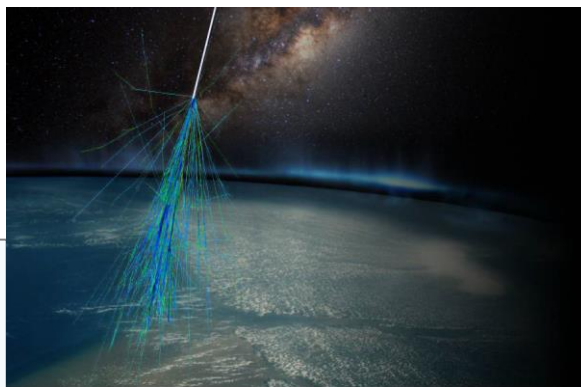
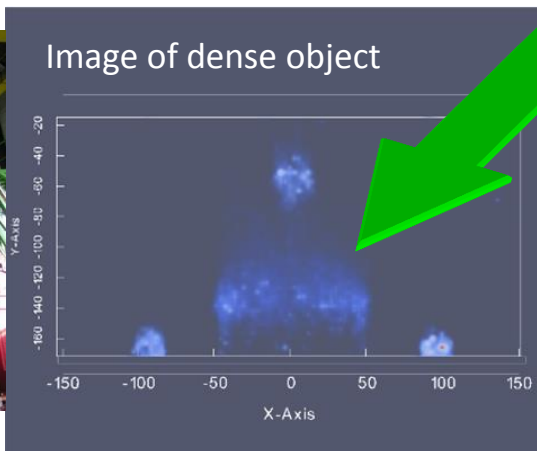


Image of dense object



Ongoing discussions on how to bring technology to industrial maturity

Homeland security: detecting nuclear material in containers



INFN and Ansaldo Nucleare → innovative Radiation Portal Monitor (RPM)



Excellent performance

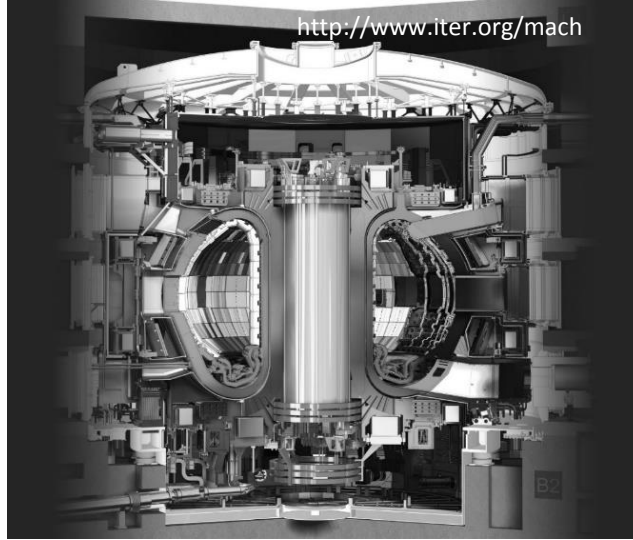
International patent granted

Talks with industry ongoing

# Fusion

RFX Consortium

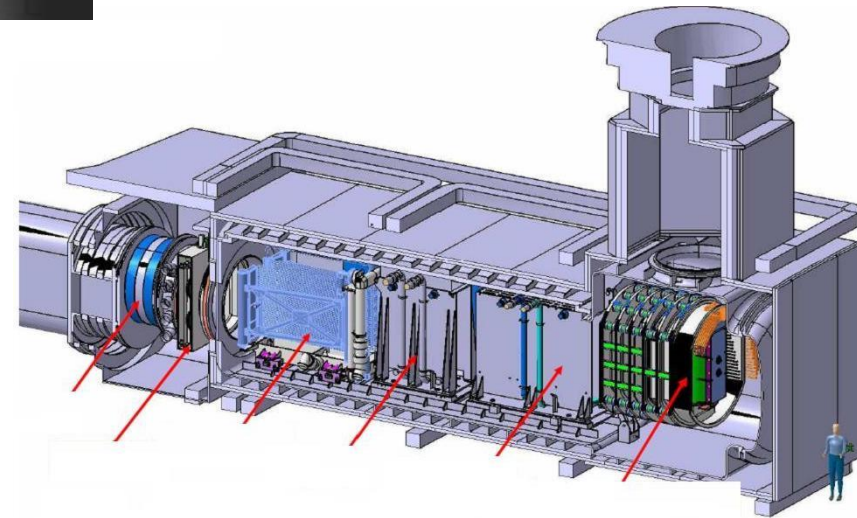
(CNR, ENEA, INFN, University of Padova, Acciaierie Venete)



One type of equipment used to obtain the **immensely high temperatures** needed



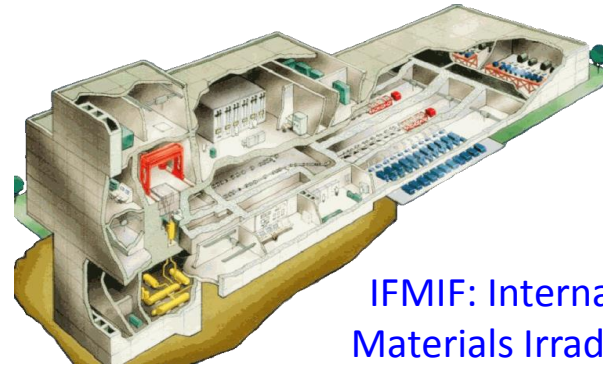
Some high-tech components produced in **Japan** and delivered to Italy



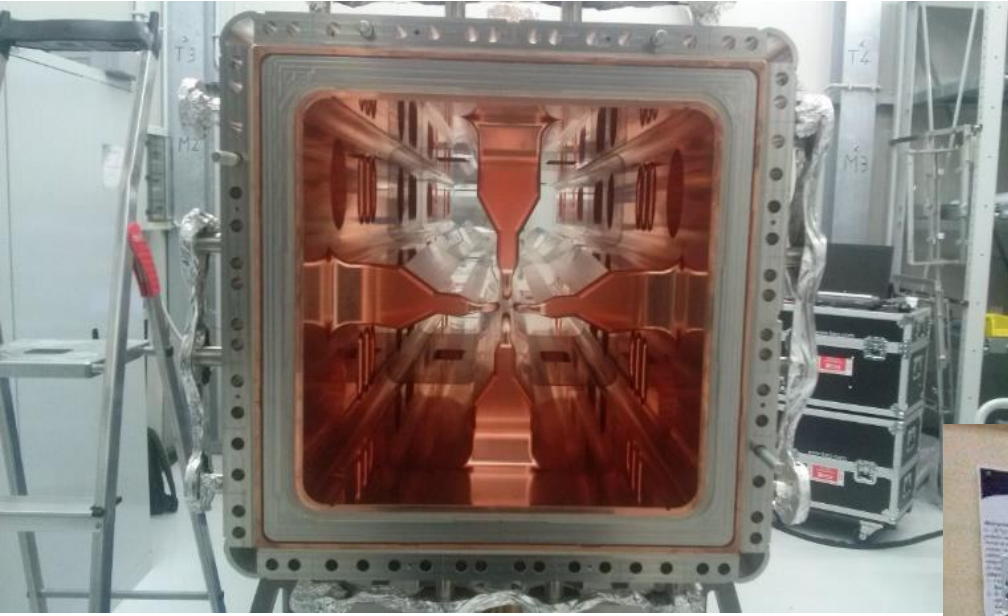
PRIMA project:  
Padova Research on ITER Megavolt Accelerator



# The facility for testing materials for fusion



IFMIF: International Fusion Materials Irradiation Facility



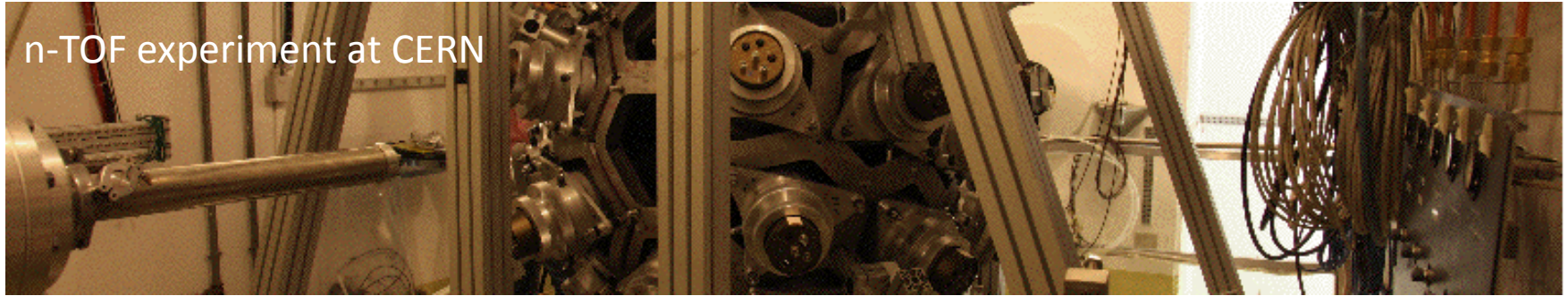
Important components for first prototype assembled in Italy (INFN+companies)



Installation and tests already in progress at Rokkasho (Japan)

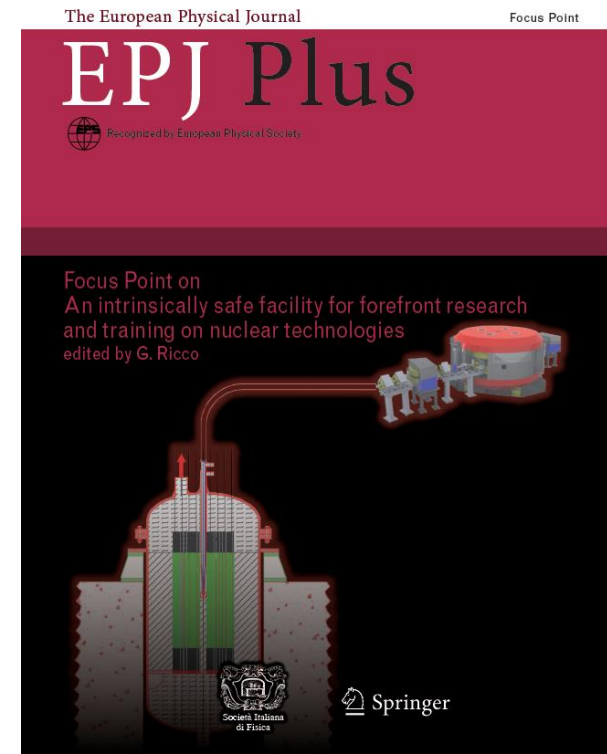
# Reduction of high-level nuclear waste

Participation to **IAEA Consultant Meeting** on standard nuclear data for fissile Uranium



Proposal for a safe low-power **facility for education and training**

Broad, effective collaboration between INFN, *Ansaldo Nucleare*, ENEA, Milan Polytechnic University, Turin Polytechnic University, LENA-University of Pavia, University of Genova



# Strategies and Initiatives

## Going from nuclear science to industry



- **Cooperation and partnerships**
  - with other institutions
  - with the industry
  - with international bodies and agencies
  - essential in leveraging each partner's pool of expertise
  
- **Dedicated infrastructure**

Concrete examples in INFN:

  - **Strategic project** on applied nuclear technologies
  - **Technology Transfer Committee** with front-office for field support
  - **Office for Support to Research** (administrative and legal aspects)
  - **External Funds office**



# Thank you!

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