Nuclear Physics at the IAEA

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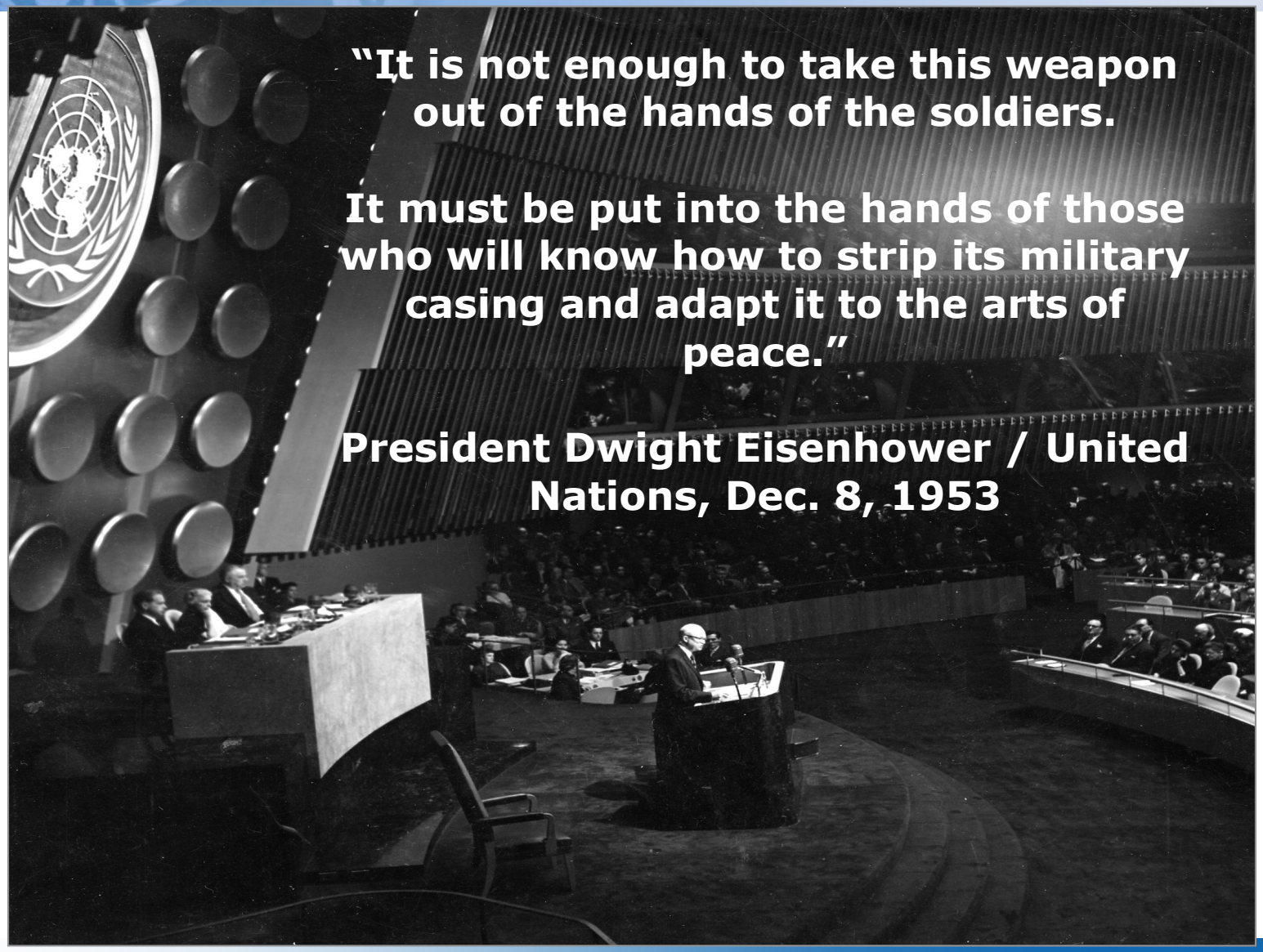
Atoms for Peace



IAEA in Numbers

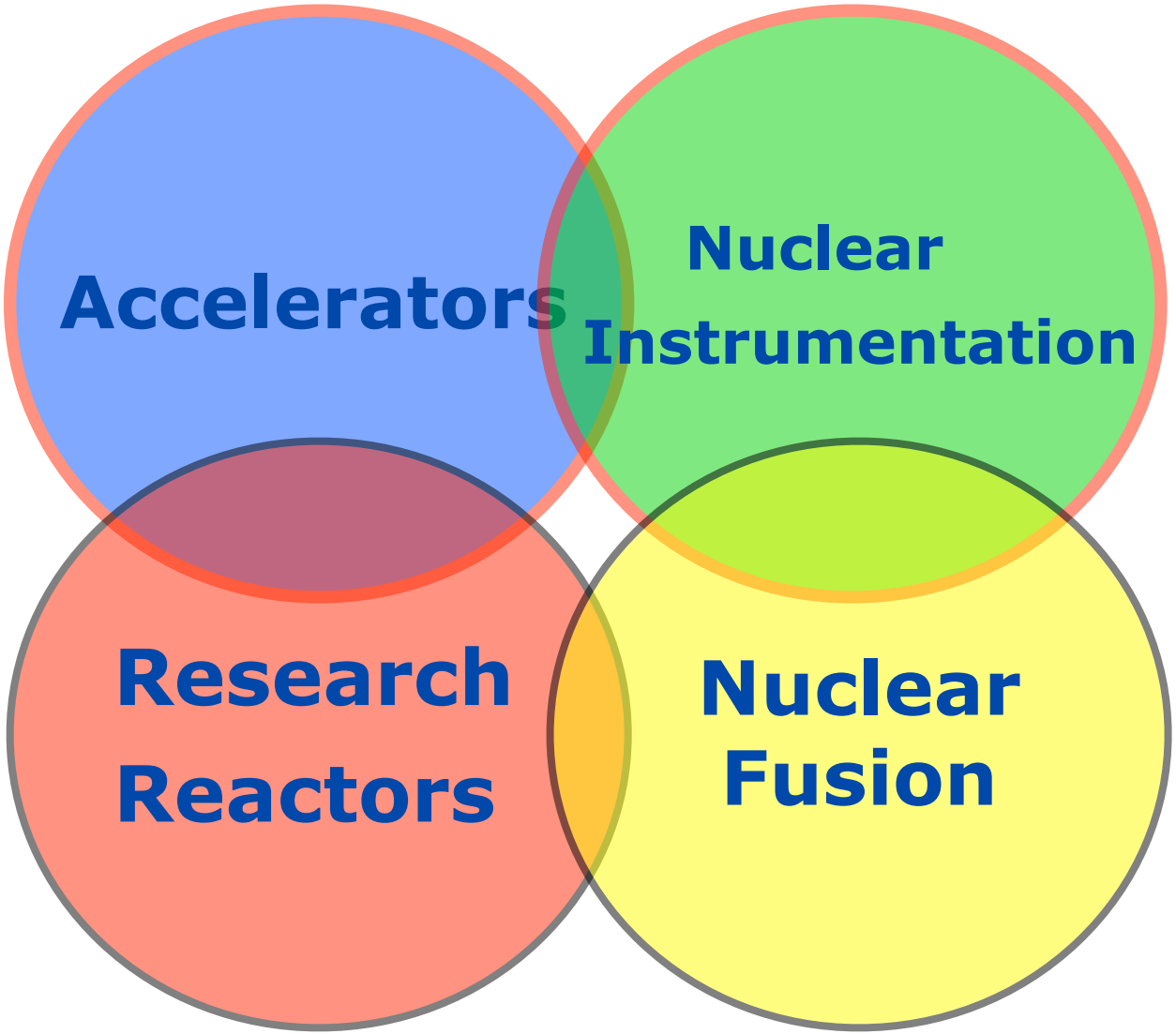
- Founded in 1958, seat in Vienna, Austria
- 164 Member States, and growing
- 71 intergovernmental and non-governmental organizations worldwide having formal agreements with the Agency.
- about 2300 professional and support staff
- €507 million total budget for 2015
- 2 liaison offices (in New York and Geneva) and 2 safeguards regional offices (in Tokyo and Toronto).
- 2 international laboratories (Seibersdorf and Monaco).
- 120 active Coordinated Research Projects
- 175 states with safeguards agreements

IAEA Perception

Depending on which aspect is seen the IAEA can be perceived as very different things:

- nuclear watchdog
- safety and security agency
- technical development agency
- funding agency
- publisher
- conference organiser
- part of the United Nations system
- the labs in Seibersdorf and Monaco can be seen as 'international lab for countries without national labs'

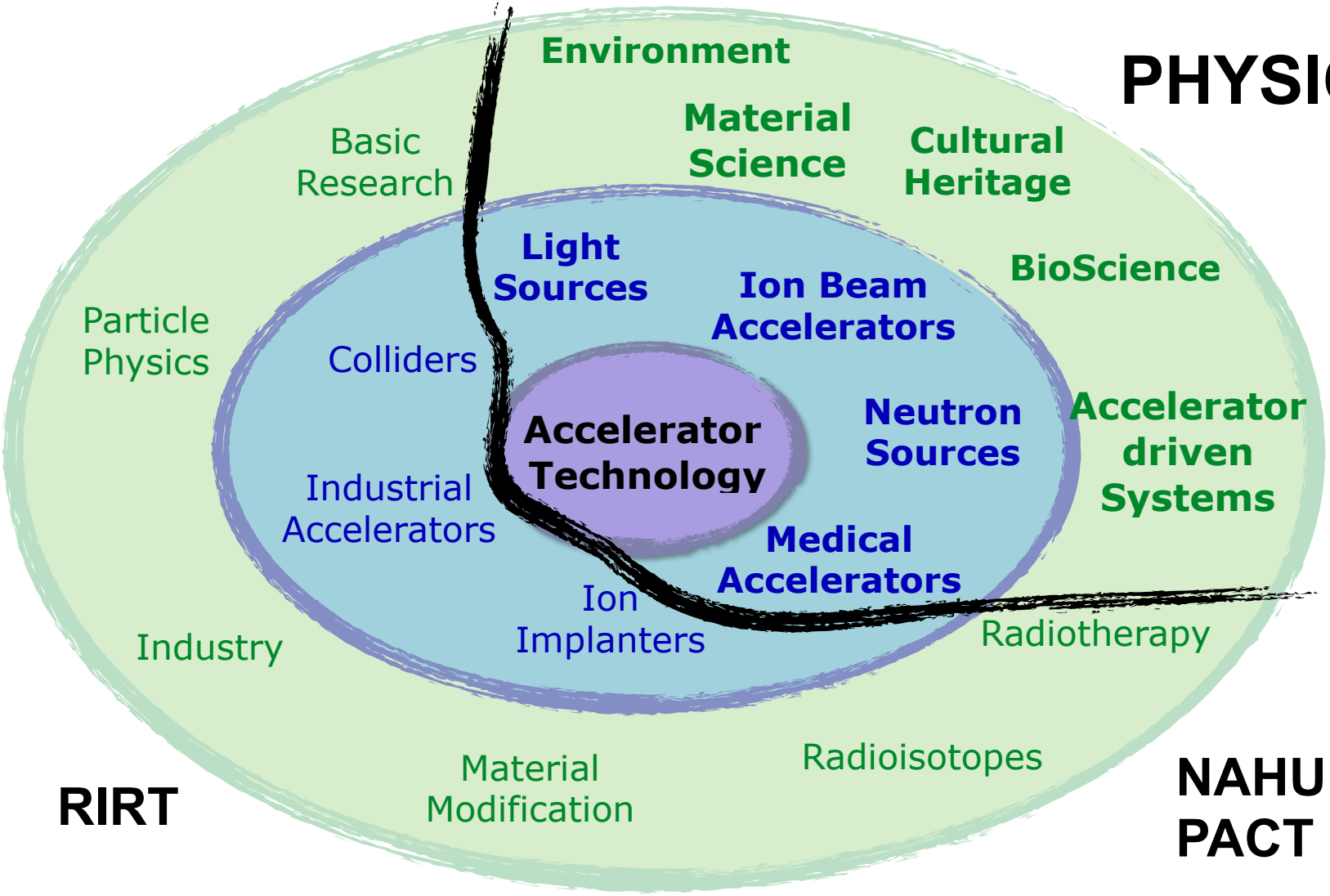
Physics Section



Physics Section in Numbers

- 19 formal staff positions - plus consultants, temporary staff, fellows, PhD students, interns, typically 25 - 30 in total
- Half of the Section in HQ, the Nuclear Science and Instrumentation Laboratory in Seibersdorf
- 3.7 Mio Euro annual regular budget in 2014/15, plus a few hundred thousand Euro extra-budgetary funds
- 12 Coordinate Research Projects with about 150 groups from > 50 Member States
- About 90 Technical Cooperation Projects in >50 Member States
- >30 Meetings per year

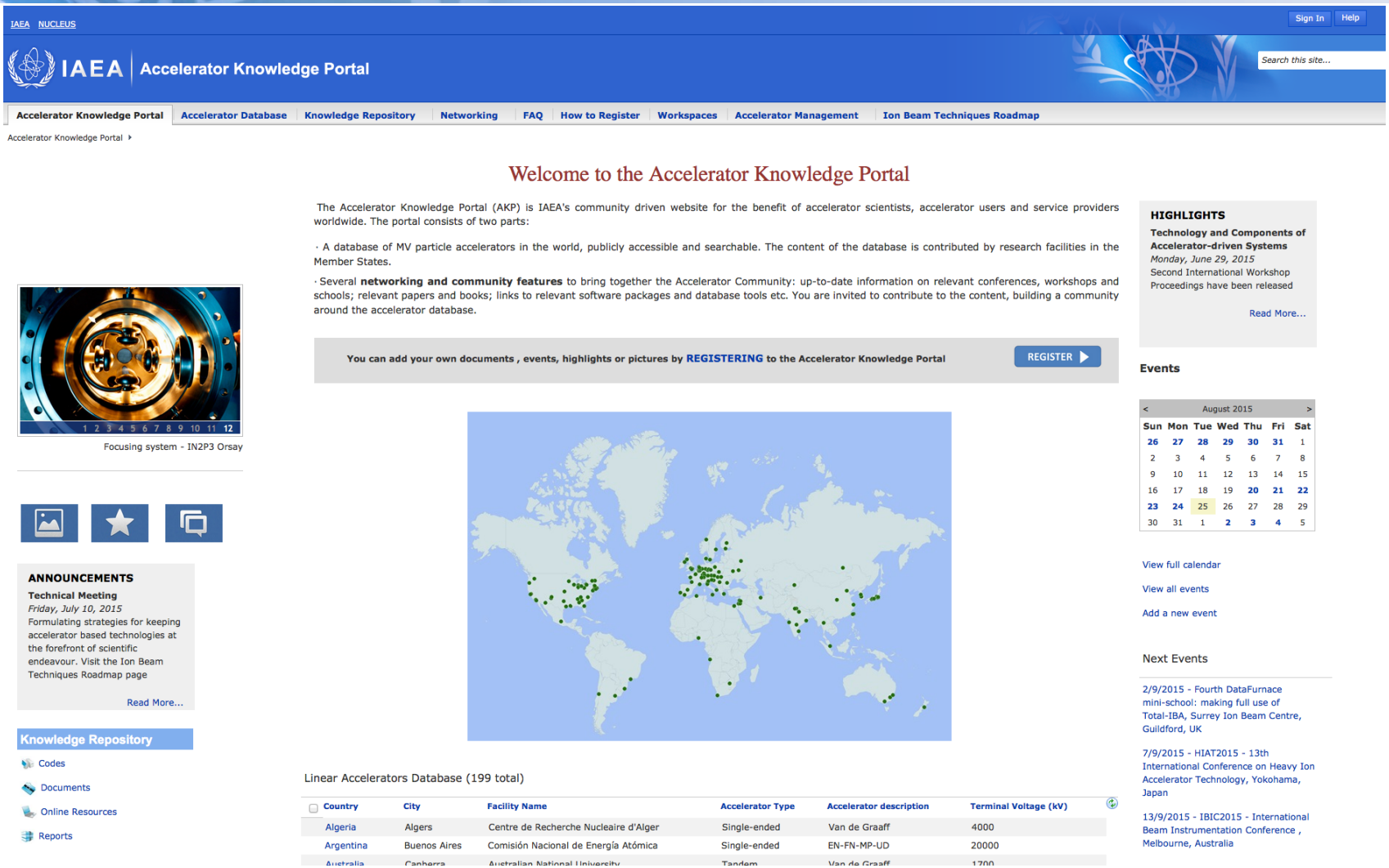
Accelerators at the IAEA



Accelerators

- There are about 30,000 accelerators in operation in the world today.
- Large accelerators for basic research, like the LHC, capture the most headlines, however:
- About 2/3 in industrial applications, 1/3 in medicine - and less than 1% in basic research.
- All products processed, treated or inspected using beams from accelerators have a collective value of about $500 billion per year.
- Accelerator technology is part of the technological development for a country, typically starting with ion beam accelerators.

Accelerator Knowledge Portal

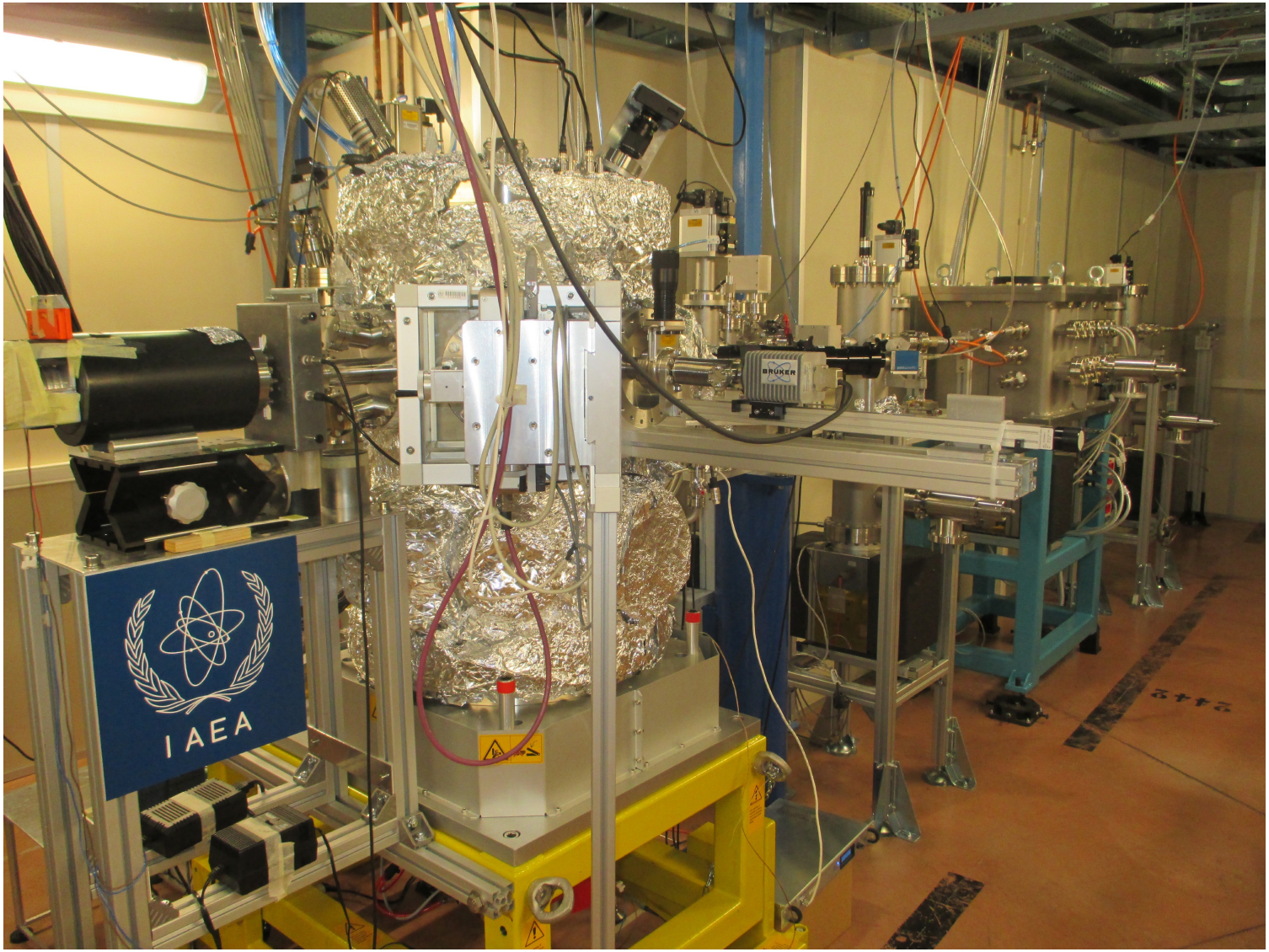


nucleus.iaea.org/sites/accelerators/

IAEA Beam Line at Elettra

- IAEA Ultra-High Vacuum Chamber installed on the new XRF beam line at the ELETTRA synchrotron in Trieste, opened by DG Amano 6.Oct.2014
- Cooperation with TU Berlin and PTB Berlin
- 40% of the beam time (about 49 days) will be available for IAEA projects
- Training, Workshops and Schools in collaboration with ELETTRA and ICTP
- Access for Research Groups from developing Member States

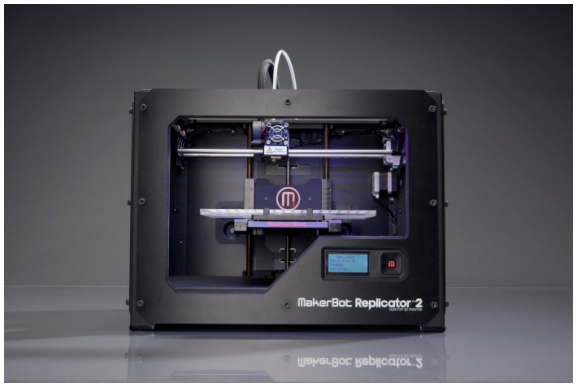
IAEA Beam Line at Elettra

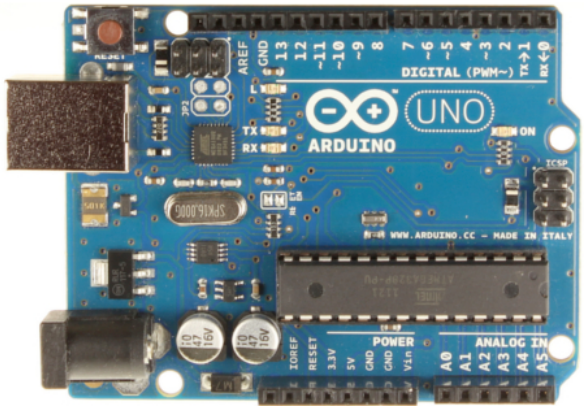


Nuclear Science and Instrumentation Laboratory

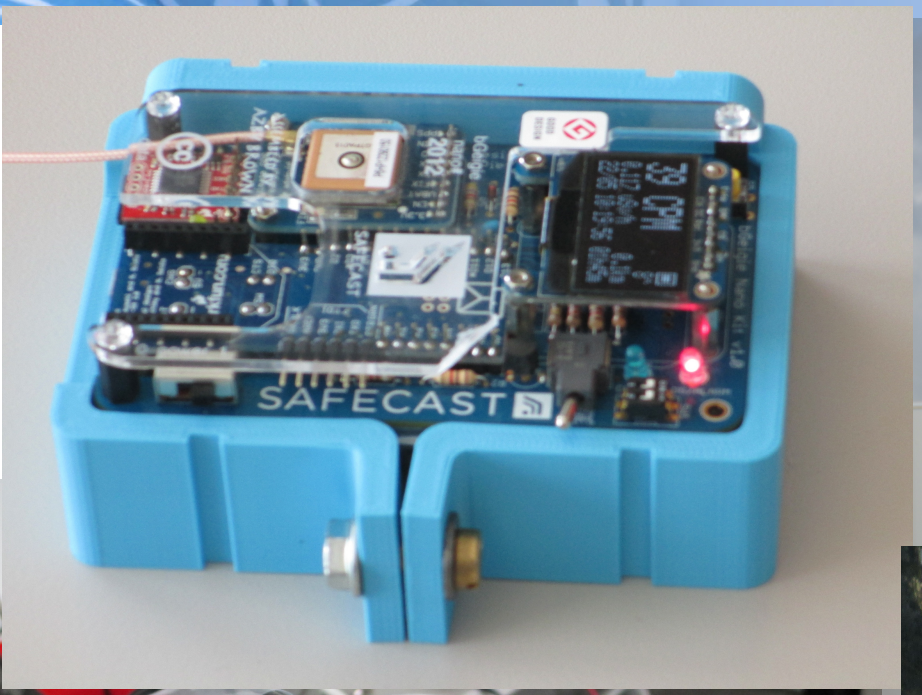
NSIL helps the Agency to remain on top of technological developments - examples include:

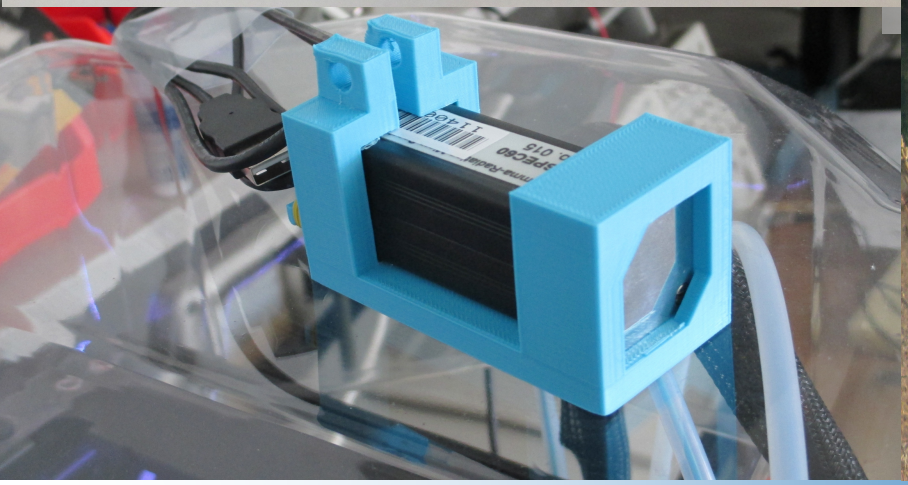
- Unmanned aerial vehicles
- Open source hardware, e.g. arduino
- Digital electronics, e.g. FPGAs
- 3-D printing
- Mechanically cooled portable Germanium detectors
- Wireless technology





UAV-based Mobile Gamma Spectrometry





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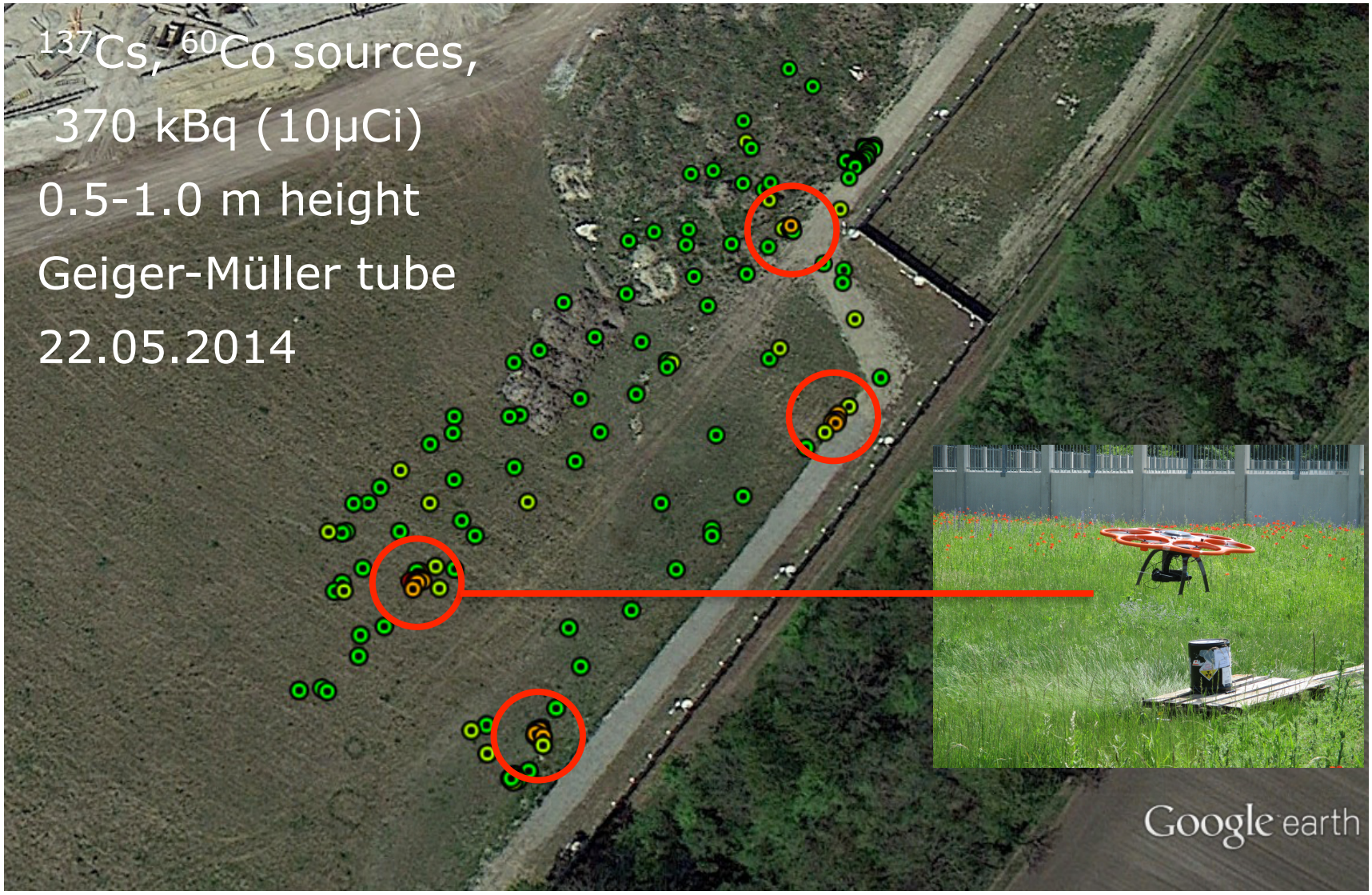
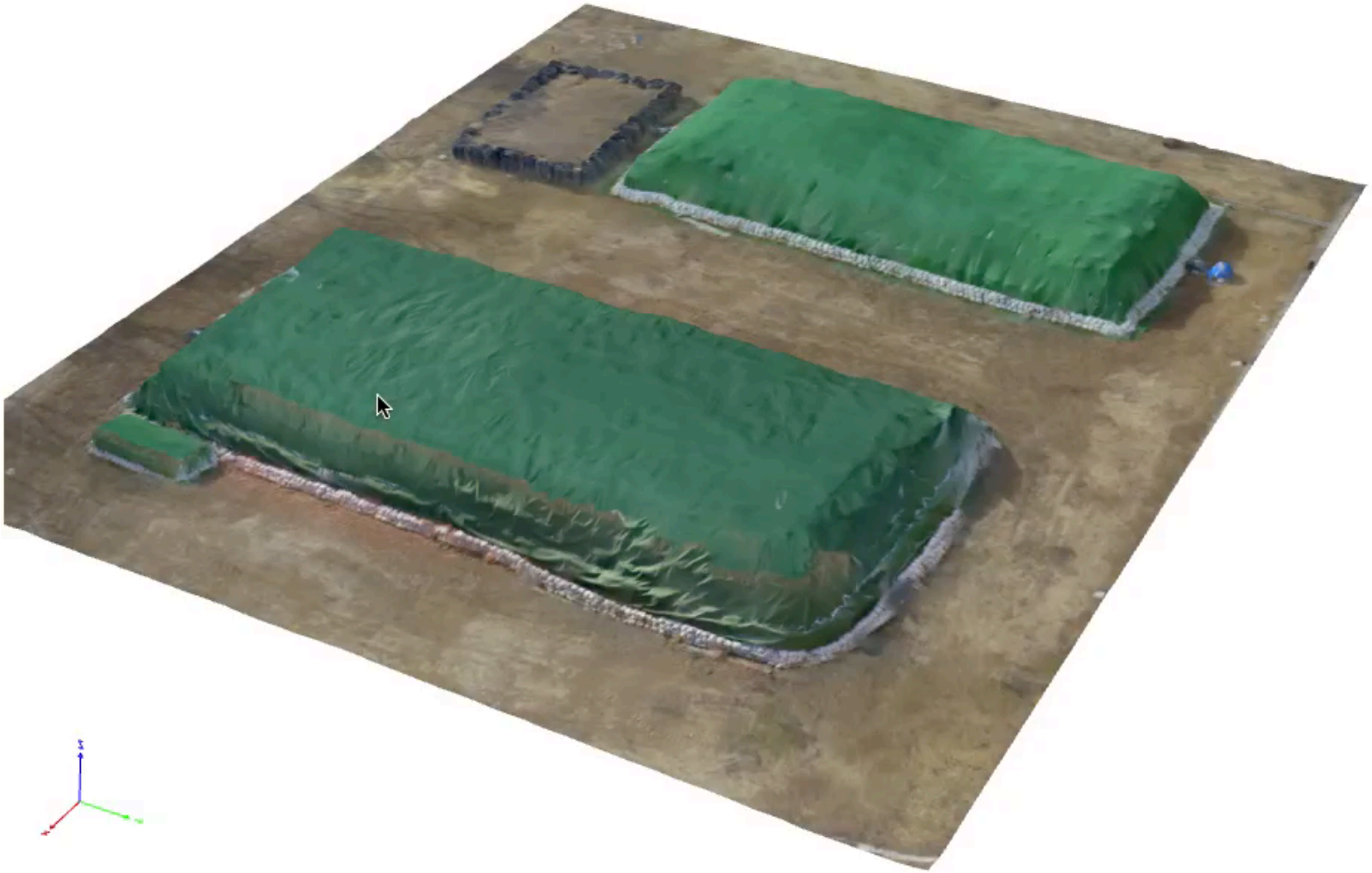


Summary

- The IAEA plays many different roles, e.g. as nuclear watchdog, safety and security agency and technological development agency.
- The IAEA Physics Section coordinates international research projects involving research groups from developed and developing countries, holds training workshops, provides data bases and carries out research in applied nuclear physics, e.g. mobile gamma spectrometry.
- There are different ways for nuclear physicists to interact with the IAEA: As technical expert, consultant, lecturer at training workshops or participant in a coordinated research project. Over the next days I will be happy to discuss these with you.

Additional Slides

Temporary Storage Site - 3D Model



Collaboration on Synchrotron Radiation