EURAD - 2 / WP2

KNOWLEDGE MANAGEMENT (KM)

Webinar on European Infra-structure Needs for Radioactive Waste Management

2004 – 2015 from ACTINET to TALISMAN

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Transnational Access to Large Infrastructure for a Safe Management of ActiNides

European Commission

EURATOM

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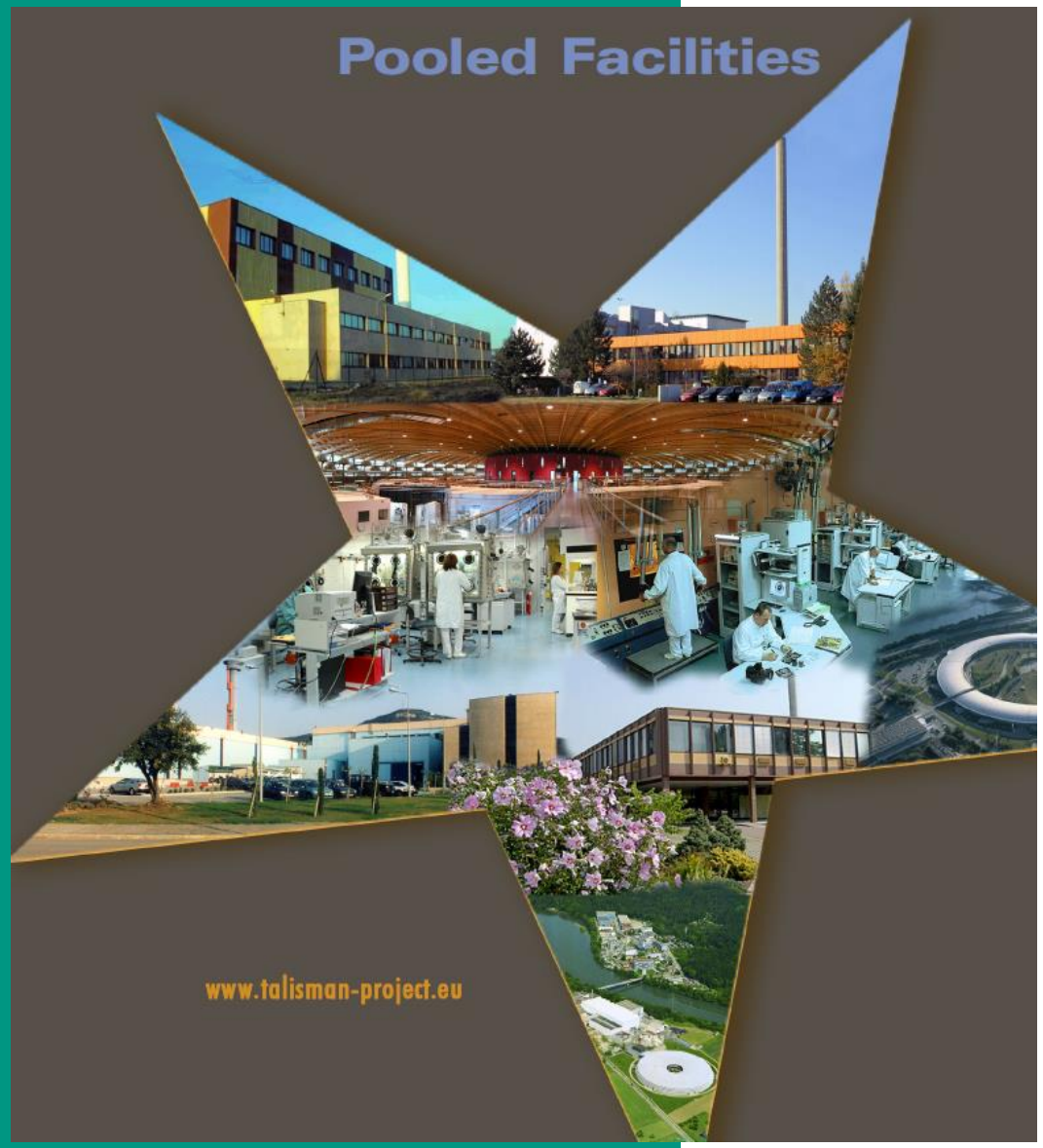


1. History and Scope

ACTINET-6: March 2004 – December 2008, FP6-EURATOM-NUWASTE

- **“Network of excellence (NoE) for actinide sciences”**
- **Background:** Only a few laboratories in Europe possess knowledge and tools in actinide science, none of them covers the full spectrum at the scale required by the technical challenges to promote safe nuclear energy generation and / or safe disposal of highly radioactive nuclear waste forms.
- **Specific goals:** Coordinate the use of major actinide / radionuclide facilities for the European scientific community; Improve human mobility between member institutions, in particular between academic institutions and national laboratories; Promote excellence through a peer-reviewed selection process of R&D and training activities.
- Goals to be met by procedures allowing the **“pooled facilities”** to operate as a multi-site user facility, including selection of proposals for research, education and training measures on a competitive basis.
- 6 calls, short-term and long-term measures (lab stays and 1 year scholarships), workshops, facility upgrades
- Coordinator: CEA

1. History and Scope

ACTINET-I3: October 2009 – January 2013, FP7-EURATOM-FISSION: Nuclear fission and radiation protection

- **“Integrated Infrastructure Initiative ACTINET-I3” as ACTINET-6 follow-up project**
- **Background:** The study of actinides requires specific tools and facilities that are only available in a small number of laboratories in Europe. It is therefore strategic to coordinate these major facilities, and to strengthen the community of European scientists working on actinides.
- **Specific goals:** reinforce the networking of the European infrastructures necessary for actinide sciences and facilitate their efficient use by the European scientific community; combine a consistent pool of facilities providing the necessary tools and environments to work on systems containing actinides; complement these experimental tools by a virtual infrastructure providing support in theory and modelling, with a focus on the complementarities between theory and experiments.
- 5 calls, short-term lab stays to conduct Joint Research Projects (JRP), conference travel grants, summer schools
- Coordinator: CEA

1. History and Scope

TALISMAN: January 2013 – December 2015, FP7-EURATOM-FISSION: Nuclear fission and radiation protection

- **“Transnational Access to Large Infrastructure for a Safe Management of ActiNides TALISMAN” as ACTINET-I3 follow-up project**
- **Background:** Unravelling the complexity of actinide materials certainly represents one of the grand challenges in nuclear science. In order to meet the needs of the safe and sustainable management of nuclear energy, it is therefore essential to maintain highest level of expertise in actinide sciences in Europe **and to prepare the next generation of scientists and engineers who will contribute to develop safe actinide management strategies**.
- **Specific goals:** In the continuation of ACTINET-6 and ACTINET-I3, TALISMAN aimed to foster the networking between existing European infrastructures in actinide sciences - open them widely to European scientists by offering and supporting transnational access to unique facilities.
- 6 calls for short-term lab stays, schools (e.g. annual summer school), Joint Research Activities (JRA), e.g. ThUL, data bases (AcReDaS), …
- Coordinator: CEA

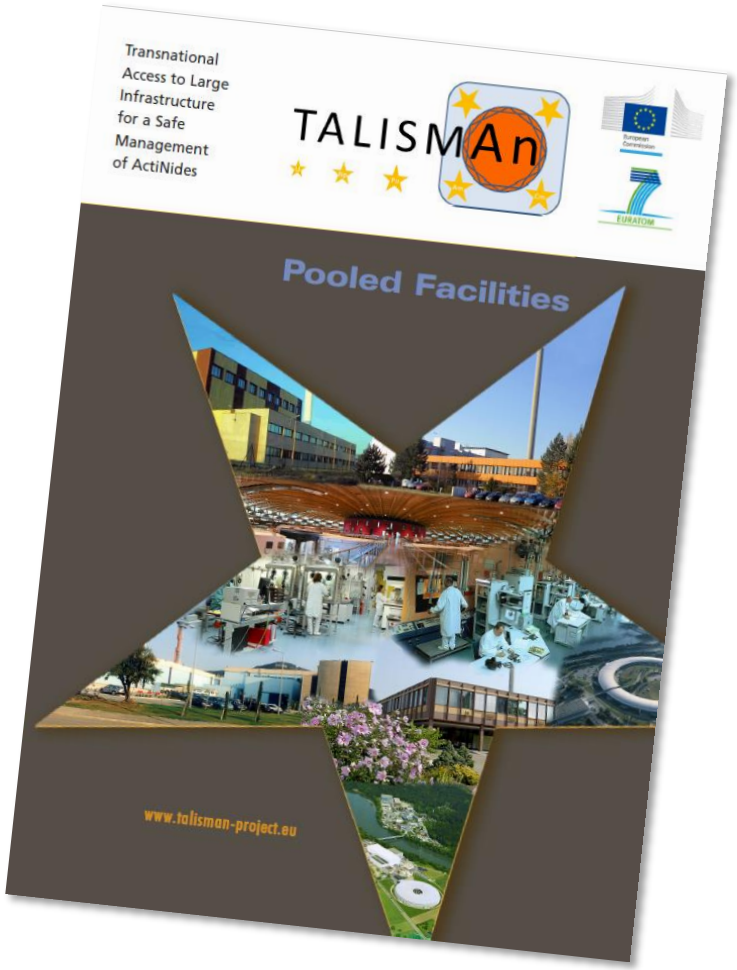
2. TALISMAN “Pooled Facilities”

- **Pooled Facilities:** TALISMAN pooled facilities were the sites of joint research projects (JRP) proposed by European institutions and organizations. These research projects potentially addressed all the major fields of basic actinide sciences, keeping in mind the potential applications for the production of nuclear fission energy and the safety of nuclear waste disposal, divided into:
  - Scope 1 - Actinide separation chemistry
  - Scope 2 - Actinides in the geological environment
  - Scope 3 - Actinide materials
- **Infrastructures:** The pooled facilities were(are) laboratories licensed and equipped with infrastructure and know-how for handling radioactive materials at various levels of activity and under controlled conditions, with access to (partially unique) analytical techniques and characterization methods (e.g. “hot” SR beamlines).
- **Access:** The TALISMAN pooled facilities were accessible as multi-site user facilities for selected joint research projects based on scientific excellence (competitive peer-review selection process).

Pooled Facilities (2013 – 2015): CEA Atalante and DPC Facilities (France), Chalmers Alpha and Fuel Laboratories (Sweden), EC-JRC Karlsruhe Laboratories and Hot Cells (Germany), HZDR-IRE Laser Laboratory (Germany) and ESRF-ROBL Beamline (France), KIT-INE Laboratories and ANKA Beamline Stations (Germany), Micro-XAS Beamline at PSI-SLS (Switzerland), NNL National Nuclear Laboratory (United Kingdom)

3. Organization and Access to PF

- One essential part of the TALISMAN project was the networking between pooled facilities and users. Activities focused on strengthening the cooperation between the consortium facilities, especially giving access to external users not having otherwise the opportunity to work with (transuranium) actinides.
- 2013 – 2015: 6 semi-annual calls for submitting JRP proposals
- A total of 94 successful JRP applications - limitations due to max. number of funded PF infrastructure access days.
- Before proposal submission, a close communication between proposers and pooled facility contact persons had to be established, guaranteeing the feasibility of the project with respect to the facility's infrastructure(s), available staff and timing.
- To ensure a high quality of research performed within the JRP, proposals were reviewed and ranked by an independent scientific advisory committee (SAC) - similar to established procedures for general user proposals for beamtime application at synchrotron or neutron sources.
- Final decision taken by TALISMAN Executive Committee (EC).



Talisman Pooled Facility brochure describing the available technical infrastructures

3. Organization and Access to PF

TALISMAN project beneficiaries:

- **JRP proposers (within the consortium and from other eligible EU research institutions:**
  - travel / accommodation expenses
  - sample transport costs
  - …
- **Pooled facility operators:**
  - agreement on fixed number of laboratory access days per call
  - per diem allowance for infrastructure access (scientific staff, technicians, consumables, …)
- **Additional consortium member institutions involved in:**
  - project management
  - Joint Research Activities (JRA)
  - other networking activities
  - training and education / dissemination activities

4. References

Original websites only partially accessible - limited information at:

- **ACTINET-6:** https://cordis.europa.eu/project/id/508836
- **ACTINET-I3:** https://cordis.europa.eu/project/id/232631/de
- **ACTINET-I3 and TALISMAN:** http://www.actinet-i3.eu/
- **TALISMAN:** https://cordis.europa.eu/project/id/323300

- "Transnational Access to Large Infrastructure for a Safe Management of ActiNides“ - Grant agreement no: 323300, Version date: 2012-10-12, Annex I “Description of Work”
- TALISMAN Pooled Facility Brochure (2013) – pdf copy available upon request