

# TAA activities in FP7 ERINDA and EUFRAT

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# ERINDA

## European Research Infrastructures for Nuclear Data Applications

*Project Coordinator*

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**Call: Fission - 2010 - 4.2.1 Transnational Access to Large Infrastructures**

**Proposal Number: 269499**

**Funding scheme: CSA-SA (Coordination and support action)**

**Acronym: FP7-ERINDA**

**Project ends 30/11/13**

# ERINDA partners



European  
Commission

FZD (Dresden, Germany)  
JRC-IRMM (Geel, Belgium)  
CERN n\_TOF (Genève, Switzerland)  
CNRS/IN2P3 (Bordeaux and Orsay, France)  
UU-TSL (Uppsala, Sweden)  
PTB (Braunschweig, Germany)  
NPI (Rez, Czech Republic)  
II HAS (Budapest, Hungary)  
JYU (Jyväskylä, Finland)  
IFIN-HH (Bucharest, Romania)  
NPL (Teddington, UK)  
FRANZ (Frankfurt, Germany)  
CEA (Bruyères-le-Châtel, France)



**All FP6-EFNUDAT participants are included --  
plus three new partners.**

Oslo cyclotron

## TAA in ERINDA

2 500 supplementary data-taking hours in 3 years

25 experiments

**SCV budget : 71.2 k€ ~ 7% of total ERINDA budget**

**TAA budget : 676 k€ ~ 67% of total ERINDA budget**

**Scientific workshops : 100 k€ ~ 10% of total ERINDA budget**

## Pool of facilities

- whole budget → Project Coordinator
- common call for proposals
- single PAC

User costs

User fees

selects best experiments  
allocates to best-suited facilities

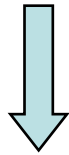
# ERINDA partners and facilities



European  
Commission

<b>nELBE</b>	<b>40 MeV superconducting electron linac + neutron TOF facility D-T neutron generator</b>	<b>FZ Dresden (Germany)</b>
<b>GELINA and VdG</b>	<b>150 MeV electron linac + neutron TOF facility 7 MV Van de Graaff accelerator</b>	<b>IRMM Geel (Belgium)</b>
<b>n_TOF</b>	<b>20 GeV proton beam of the PS + spallation neutron source + neutron TOF facility</b>	<b>CERN Geneva (Switzerland/France)</b>
<b>AIFIRA</b>	<b>3.5 MV Van de Graaff accelerator</b>	<b>CENBG Bordeaux (France)</b>
<b>Tandem- ALTO</b>	<b>15 MV tandem and photo-fission source</b>	<b>IPN Orsay (France)</b>
<b>TSL</b>	<b>Cyclotron (180 MeV p)</b>	<b>UU-TSL Uppsala (Sweden)</b>
<b>PIAF</b>	<b>3.7 MV Van de Graaff accelerator Cyclotron (19 MeV p and d, <math>\alpha</math>)</b>	<b>PTB Braunschweig (Germany)</b>
<b>NPI</b>	<b>Cyclotron (20 MeV p and d, <math>\alpha</math>)</b>	<b>NPI Řež (Czech Republic)</b>
<b>BRR</b>	<b>10 MW research reactor</b>	<b>IKI Budapest (Hungary)</b>
<b>JYFL</b>	<b>130 MeV heavy ion cyclotron 30 MeV high intensity cyclotron + IGISOL</b>	<b>JYFL, Jyväskylä (Finland)</b>
<b>IFIN HH</b>	<b>9 MeV Tandem accelerator (p to Au)</b>	<b>IFIN HH, Bucharest (Romania)</b>
<b>NPL</b>	<b>3.5 MeV Tandem Van de Graaff accelerator</b>	<b>NPL, Teddington (Great Britain)</b>
<b>FRANZ</b>	<b>500 keV RFQ + proton linac</b>	<b>GUF, Frankfurt (Germany)</b>
<b>CEA</b>	<b>4 MV Van de Graaff accelerator 7 MV tandem accelerator</b>	<b>CEA Bruyères-le-Chatel (France)</b>

## Programme Advisory Committee



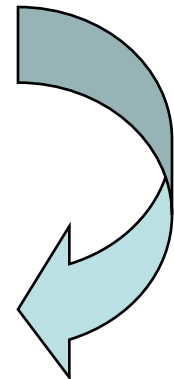
### 1. supported experiments

- waste transmutation or GenIV systems
- feasibility
- quality of nuclear data
- **young scientists (< PhD + 6 years)**

### 2. best-suited facility

- best match experiment – facility
- balance between facilities
- available beam time
- value-for money
- user preference

### 3. financial limits of TAA contribution



## 4. Eligibility conditions for user groups

- group leader and majority of users :  
EU Member States or EURATOM Associated States,  
but not the country of the facility.
- entitled to disseminate results via publications and presentations.  
preferentially peer-reviewed international scientific journals are preferred.
- priority should be given to:
  - first-time users
  - groups involving young scientists
  - working in country without such infrastructure
- experiments:
  - waste transmutation and minimisation, accelerator-driven systems
  - improved reactor operation and fuel management
  - advanced innovative nuclear energy systems
  - nuclear reactor safety
- + development of experimental techniques needed for these measurements.

# Practical organisation of Calls



- Open Call for proposals, with 4 closing dates

<u>Closing date</u>	<u>PAC meeting</u>	<u>Measurement period</u>
March 20, 2011	April 2011	May 2011 – August 2013
September 30, 2011	October 2011	December 2011 – August 2013
March 15, 2012	April 2012	June 2012 – August 2013
September 30, 2012	October 2012	December 2012 – August 2013

## • Call communication

- via electronic mailing
- NEA (JEFF, WPEC)
- via website
- word-of-mouth campaign

Project ends 30/11/13



## ERINDA Performance Indicators (month 18)

PPI		DOW	Status
1	Beam hours at ERINDA facility	1000	441 hours delivered, 993 hours in pipeline
2	Participants of the experiments	30	19 participated in 6 experiments (17 approved)
3	Participating young researchers	10	5 in 6 experiments
4	Deliverables	11	8 delivered
5	Average user satisfaction score (4 experiments)	4	4.6

**Applied (approved) beam hours:**

**PAC 1: 1304 (600)**

**PAC 2: 2522 (834)**

**PAC 3: 1473 (757)**

**Factor 2.4 higher demand than can be supported.**

# Facility costs and access proposal



Facility	Unit cost per hour (€)	Fraction charged to the project	Access cost per hour (€)	Minimum quantity of access offered to the project (hours)	Quantity already allocated and requested in PAC 1+2/PAC 3
HZDR	433	0,8	346	270	270+100/100
n_TOF	3 409	0,08	273	270	200/100
CENBG	140	1	140	180	0/0
IPNO	500	0,5	250	180	0/0
UU-TSL	647	0,66	427	180	80/45
PTB	276	1	276	180	240/96
NPI	231	1	231	180	128/0
II HAS	114	1	114	270	300/0
JYU	208	1	208	180	0/100
IFIN-HH	98	1	98	180	96/0
NPL	278	1	278	180	0/0
CEA	271	0,83	225	250	0/0
TOTAL				2 500	1424/657

**Oslo**

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Joint  
Research  
Centre

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**0/216**

# EUFRAT

European facility for innovative  
reactor and transmutation neutron data

**EURATOM - Coordination and Support Actions**

**Contract n° 211499**

**Project Coordinator : W. Mondelaers**

<http://irmm.jrc.ec.europa.eu/eufrat>

- November 1, 2008 – October 31, 2012
- 4500 hours of supplementary data-taking hours
  - 3600 hours at GELINA
  - 900 hours at VdG
- 27 ‘typical’ experiments



## 4 Calls

*experimental proposals :  
requested beam time :*

**38  
8 918 hours**

*experiments approved :  
approved beam time :*

**33  
4 730 hours  
(53 % of requested)**

<i>experiments accomplished :</i>	<b>21</b>
<i>beam time delivered :</i>	<b>3 995 hours</b>
<i>experiments in the pipeline :</i>	<b>12</b>
<i>hours still to be delivered :</i>	<b>1 838 hours</b>
<i>total delivered at end of project :</i>	<b>5833 hours (DoW + 30%)</b>
<i>external users :</i>	<b>62 (21 experiments)</b>
<i>first-time users :</i>	<b>45 %</b>
<i>students :</i>	<b>20 %</b>

- **Both ERINDA and EUFRAT very successful**
- **TAA was oversubscribed by about a factor of 2**
- **Short term Scientific visit in ERINDA a very successful possibility**
- **Improved networking between different facilities and experimental groups working in the field**
- **Though some facilities are lacking interest**