RADNEXT OFFERING FOR AERONAUTICS AND AVIONICS PART 1

Application for Beamtime, More Neutron Facilities

Fraunhofer
INT

RADNEXT Facilities for Aeronautics and Avionics
Overview

- Originally I was asked to present some facilities of possible use for testing with respect to applications in the atmosphere
  - This will now be very short and only show three Neutron facilities that have not been shown in a dedicated slide before

- For more details on technical background please refer to Carlos and Camiles presentations, also for their extensive coverage of specific Neutron facilities
  - Other potential facilities (Protons) were also already mentioned before

- So: During the day I mostly threw away the old talk and made a couple of new slides

Facilities for Avionics applications within RADNEXT

Examples of useful mono-energetic Neutron sources

- As mentioned many times before, within RADNEXT will award about 6000 hours of free beamtime at international facilities with many different radiation types and energy ranges

RADNEXT Facilities

FNG - ENEA

Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

Contact: Salvatore Fiore

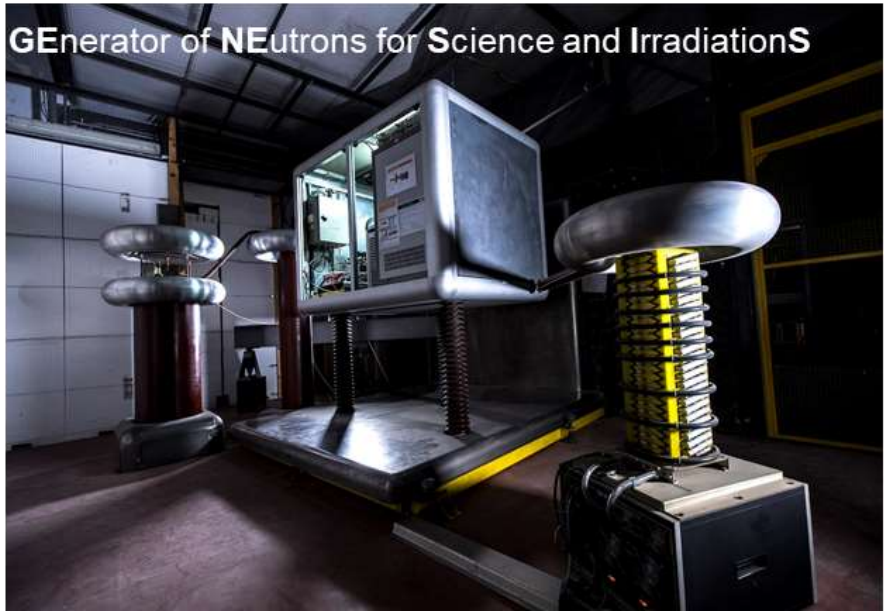
- Frascati Neutron Generator (FNG)
- 14 MeV D-T monoenergetic neutron source, max yield 10^{11} n/s
- Maximum usable flux $5x10^{9}$ n/cm^{2}s
- Large hall, low backscattering, low thermal neutron contamination
- FLUKA and MCNP full facility simulations
- 550h

GENESIS - LPSC

Contact: Annick Billebaud

- The accelerator: GENEPI2: 220 keV deuterons onto a T or D solid target
- 14.2 or 3.1 MeV neutrons
- Mainly for microelectronics (SEE studies, component tests)
- 100h/year

Energy	Max. beam current	Absolute intensity	Max Flux (at 1 cm)
14.2 MeV	150 µA ±2%	8×10^{9} $n.s^{-1}$	5.10^{7} $n.cm^{-2}.s^{-1}$



PIAF – PTB

Contact: Benjamin Lutz

- National Metrology Institute of Germany
- Neutron reference fields at the PTB Ion Accelerator Facility (PIAF)
  - Monoenergetic neutrons
  - Collimated neutron beams with broad energy distribution (white neutrons)
  - Ion microbeam (3 µm FWHM)
- TA offering: 90h (total) for 3 slots

Monoenergetic Neutrons

^{45}Sc (p,n) ^{45}Ti : 8, 27 keV

^{7}Li (p,n) ^{7}Be: 0.03 – 0.7 MeV

T (p,n) ^{3}He: 0.7 – 4 MeV

D (d,n) ^{3}He: 4 – 15 MeV

T (d,n) ^{4}He: 14 – 19 MeV

$\varphi_{1m} = 2.5 \cdot 10^{2}$ *to* $1.9 \cdot 10^{4}$ cm^{-2}s^{-1}

$\varphi_{max} = 5 \cdot 10^{5}$ *to* $5 \cdot 10^{6}$ cm^{-2}s^{-1}

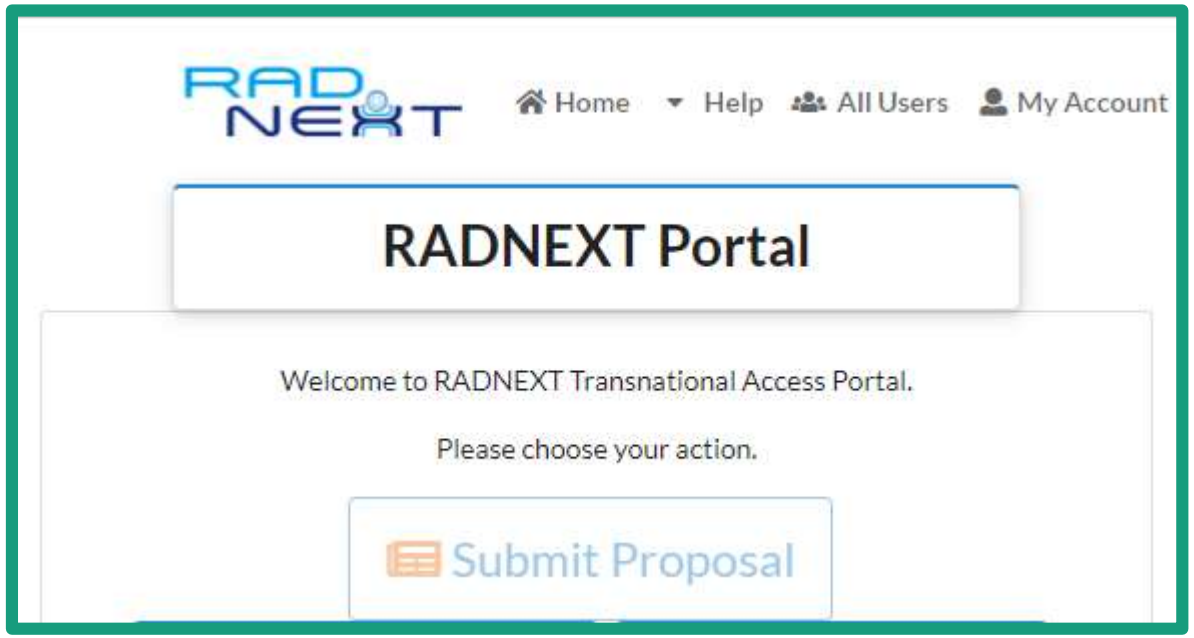
Introduction
New aim of this presentation

- From poll it was clear that the proposals are still challenging to users
- Since I'm mainly involved in WP3 (WP leader Salvatore Fiore, FNG) within RADNEXT in evaluating the proposals and helping to distribute the beamtime I thought I will try to talk about that rather than repeating information given before
- So I will try to show very briefly
  - What influences your chances to be successful with your proposals?
  - How can you raise your chances?
- Remark: Acceptance rate seems to decrease due to higher number of proposals

Request for beamtime within RADNEXT

Application proposal portal

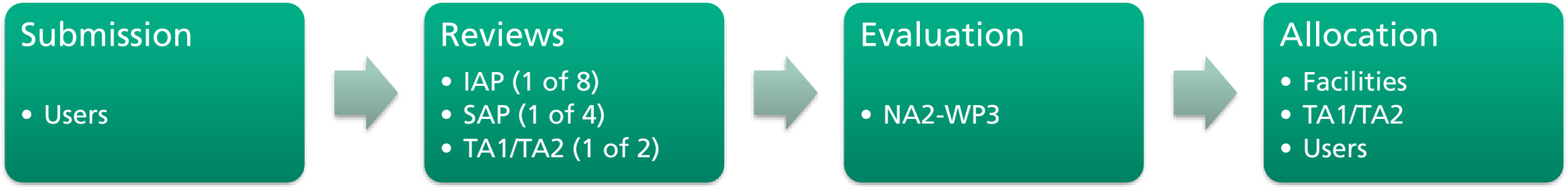
https://radnext-ta-portal.web.cern.ch/



1. Proposal title (acronym)
2. Beam Type
3. Project abstract
4. Project Description - Excellence section
5. Project Description- impact section
6. Project Description - implementation section
7. Amount of irradiation
8. Group leader
9. Team members

Request for beamtime within RADNEXT

Proposal evaluation process



Request for beamtime within RADNEXT

Proposal evaluation criteria

- Commercial vs. scientific goals
- Requested amount vs. availability
- Level of detail and readiness
- Convincing and justified test plan
- Innovation, Ambition, Expected output

Request for beamtime within RADNEXT

Proposal hints

- Meet RADNEXT ideas and goals
- Target curiosity of reviewers
- Give a clear picture of your project
- Explain, what sets you apart from other
- Ask for reasonable beamtimes

Finally ….
Last slide

Thanks a lot for your attention!