Words of introduction

Rubén García Alía (on behalf of the RADNEXT project)
RADNEXT 1st Annual Meeting – 8-9 June 2022
https://indico.cern.ch/e/radnext-2022


SPIE

CERN and its involvement and leadership in EU Projects

- CERN operates the largest complex of particle accelerators
- The 65-year history of CERN is marked with impressive achievements in the construction and operation of powerful linear and circular accelerators
- CERN offers unique infrastructures for the irradiation of electronic components and systems
- CERN also concentrates an important amount of expertise related to radiation effects on electronics, mainly through the R2E project, in charge of ensuring a reliable operation of the accelerator with regards to the impact of the accelerator radiation environments on the commercial electronic components used in the critical Large Hadron Collider (LHC) and rest of the accelerator chain.
- CERN has (*) coordinated 11 large projects funded under the Research Infrastructure programmes of FP7 and H2020, including 6 Integrating activities
- The RADNEXT project management will rely on the professional and experienced support from:
  - The EU Office
  - The Finance Department
  - The Legal Service

(*) Figures apply to June 2021

RADNEXT definition, as EU project

RADNEXT is a H2020 project funded under European Research Infrastructures work programme, with 31 beneficiaries and a total of 5M€ EC funding, including 2,5M€ funding dedicated to Transnational Access Activities

https://cordis.europa.eu/project/id/101008126

HORIZON 2020

RADiation facility Network for the EXploration of effects for indusTry and research

Fact Sheet | Results

Project description

DE EN ES FR IT PL

A network of irradiation facilities to test state-of-the-art microelectronics

The EU-funded RADNEXT project aims to create a network of facilities and related irradiation methodology for responding to the emerging needs of electronics components and system irradiation. It also aims to combine different irradiation and simulation techniques for optimising the radiation hardness assurance for components and systems, focusing on the related risk assessment. The RADNEXT community will introduce a collection of facilities and skills to address world-wide user needs for space and high-reliability ground level applications, including automotive, medical and high-energy physics accelerators. RADNEXT will ensure that academia, research labs and industry will have sustained, varied and high-quality access to irradiation beams to progress with research on radiation effects on electronics.

Show the project objective

Programme(s)

H2020-EU.1.4. - EXCELLENT SCIENCE - Research Infrastructures (MAIN PROGRAMME)

H2020-EU.1.4.1.2. - Integrating and opening existing national and regional research infrastructures of European interest

Topic(s)

INFRAIA-02-2020 - Integrating Activities for Starting Communities

Call for proposal

H2020-INFRAIA-2018-2020

Project Information

RADNEXT
Grant agreement ID: 101008126

DOI
10.3030/101008126

Start date 1 June 2021
End date 31 May 2025

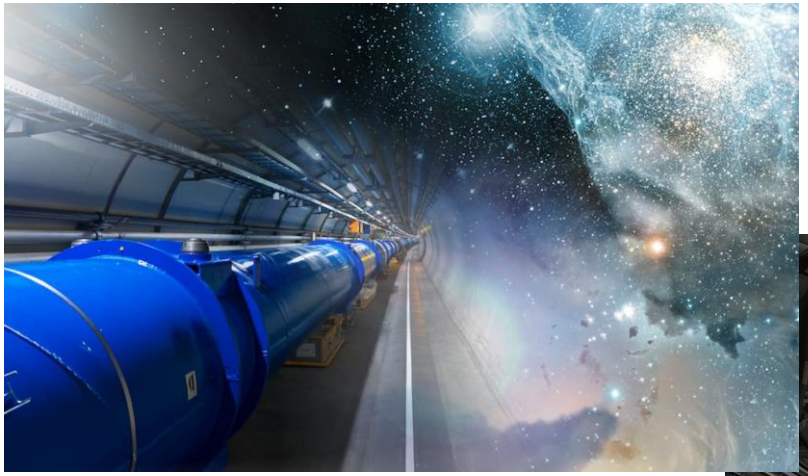
Funded under
EXCELLENT SCIENCE - Research Infrastructures

Total cost
€ 4 999 999,75

EU contribution
€ 4 999 999,75

Coordinated by
ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
Switzerland

CERN’s main roles in RADNEXT



- CERN is RADNEXT’s project coordinator, and also has technical and scientific involvement in almost all WPs

- It provides Transnational Access through the CHARM mixed-field facility, especially suited for system level testing

Key objective of the RADNEXT annual meeting

- To create an environment in which we can openly and efficiently discuss and exchange related to where the project is, and in which direction it should be heading
- More particularly, to:
  - Consolidate, highlight and disseminate project aspects that are working well
  - Identify points of possible improvement, prioritizing those that might be limiting the project in a stronger way
  - Give the word to the facilities, so that they can share with us their experience and view related to RADNEXT (in terms of what to keep/consolidate, improve, include, modify, remove…)

A personal view of RADNEXT

- Very powerful framework, both for users and facilities, and including also the networking and research activities
- Given the complexity of the radiation testing “business” (facility availability, matching user needs with facility capacity, etc.), the role of RADNEXT as link between the user and facility “worlds” seems to me very pertinent, and with a lot of positive impact potential
- RADNEXT is therefore a great opportunity to positively influence the radiation effects community, and we should therefore all treat it as such, rather than simply as a “best effort” activity

Some identified challenges (in no particular order, and certainly incomplete)

- Issues related to the use of CERN online/collaborative tools
- TA workflow (who needs to do what, and at what stage of the process)
- Other project workflows (deliverables & milestones, publications…)
- Last minute beam time cancellation from users (or facilities, though these are typically more justified)
- Beam time shortage at facilities (especially for heavy ions!)
- “Entry barrier” for certain RADNEXT facilities, in which “standard” tests cannot (yet) be scheduled, and which would require some level of validation/benchmark before “routine” tests can be carried out
- Large deviations between the promised beam time, and the one actually being provided, due to e.g. lack of facility availability and/or lack of proposals, so far
- “Ownership” of deliverables and milestones by WP leader (i.e. you need to be proactive in leading the efforts of defining what needs to be done, and making sure it is done within the defined timeline, and achieving the necessary quality. This includes also the lower-level definition of what is needed for the deliverable or milestone, which is often not directly derived from the title)

Things we should (already) be proud about

- More than 100 TA proposals, with almost 10 of them having made it all the way until the end of the lifecycle (i.e. including TA user report)
- Development and exploitation of dedicated TA portal, in order to manage and centralize (almost) the entire lifecycle
- “Impact factor” in radiation effects community (invited talks, etc.)
- Successful and timely recruitment of highly qualified and motivated PhD and postdocs
- Preparation and start of ambitious research program, focusing on aspects highly relevant to RADNEXT’s core objectives
- A lot of fruitful interaction within the project!

Some extra ambitions related to the project

- Giving the word also to the users, to collect their view on RADNEXT (e.g. through a survey?) and given them the opportunity to present their results (e.g. though an online “RADNEXT user day”?)
- Aggregation of relevant project info, and clear and efficient information dissemination
  - Facility information (i.e. what does the network offer?)
  - Statistics on what (and how) RADNEXT users are testing
  - TA dashboard, showing related progress
  - Scientific publication describing RADNEXT and its activities
- Starting to think and discuss about what will come after RADNEXT

Thanks for your attention!

Image Source: CERN