



WP2 update

Communication, Dissemination, Exploitation and Training

Ennio Capria (ESRF), Hanne Stas (KU Leuven), Ygor Aguiar (CERN)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008126

RADNEXT 3rd Annual Meeting – 10-11 June 2024

Milestones and deliverables

Work Package 2



RAD
NEXT

RADNEXT 3rd Annual Meeting – 10-11 June 2024

Deliverables

| Status | ID | Title | Deadline | Responsible (s) |
|-----------|------|--|------------|-----------------|
| Completed | D2.1 | Communication and dissemination plan | 31/08/2021 | KU Leuven |
| Completed | D2.2 | Exploitation and data management plan | 30/09/2021 | ESRF |
| Completed | D2.3 | Intermediate report on the coordination of Communication, Dissemination, Exploitation and training | 31/05/2023 | KU Leuven |
| TBD | D2.4 | Final Preferred Parts List | 31/05/2025 | KU Leuven |
| TBD | D2.5 | Final report on the coordination of Communication, Dissemination, Exploitation and training | 31/05/2025 | KU Leuven |

Deliverable D2.3:

- Intermediate report on the coordination of Communication, Dissemination, Exploitation and Training
- Uploaded on European Commission portal on 31 May 2023



Milestones

| Status | ID | Title | Deadline | Responsible (s) |
|----------------|------|--|------------|------------------|
| Completed | MS08 | Project Website launched | 31/08/2021 | KU Leuven / CERN |
| Completed | MS09 | Appointing the Industrial Advisory Panel (IAP) | 30/11/2021 | ESRF |
| Completed | MS10 | List of commercial components of interest | 31/05/2022 | KU Leuven |
| Completed | MS11 | First RADNEXT-to-Industry event finished | 31/05/2022 | ESRF |
| Completed | MS12 | Second RADNEXT-to-Industry event finished | 30/11/2023 | ESRF |
| <i>In work</i> | MS13 | Third RADNEXT-to-Industry event finished | 31/05/2025 | ESRF |

MS13 to be achieved this week with GB-RADNEXT 😊



Exploitation and link to industry



G-RADNEXT 2023

- Workshop dedicated to industry, 8-9 November 2023
- Organised by RADNEXT in collaboration with the Platform for Advanced Characterisation (PAC-G), Streamline and the RADECS association
- **Aim:** To increase the level of engagement from industry and to stimulate discussion between industry and academia
- 2-day hybrid event at CERN (+Zoom)
- Almost 100 people joining simultaneously



GB-RADNEXT 2024

THE WORKSHOP FOR INDUSTRY ON RADIATION HARDNESS TESTING OF SEMICONDUCTOR DEVICES AND SYSTEMS AT THE RADNEXT FACILITIES

GB-RADNEXT

FUTURE FACILITIES
FUTURE PERSPECTIVES

12-13 JUNE 2024 - RUTHERFORD APPLETON LABORATORY, HARWELL, UK

HOSTED BY:

- RADNEXT
- NANO ELEC. Platform for Advanced Cooperations (FAC-O)
- Accelerating RARELS
- Science and Technology Facilities Council
- ISIS Neutron and Muon Source
- 40 Years of the UK Particle Accelerator

indico.cern.ch/e/gb-radnext-2024



Video dedicated to industry

- Finished in September 2023
- Shown at RADECS conference and G-RADNEXT workshop
- Long and short version available
- Promoted through LinkedIn



Communication and dissemination

Conferences and events

During **2023**, RADNEXT was present at the following conferences (booths or invited talks):

- RADHARD Symposium (6-7 June, Seibersdorf)
- Aerospace Europe Conference, EUCASS-CEAS (9-13 July, Lausanne)
- NSREC (24-28 July, Kansas City)
- RADECS (25-29 September, Toulouse)
- G-RADNEXT Workshop (8-9 November, Geneva)
- SERESSA (4-7 December, Torino)



Communication and dissemination

Exhibitor booths

RADNEXT
1,295 followers
7mo • 🌐

A small but enthusiastic part of the RADNEXT team at RADECS 2024. Great conversations in our booth with conference attendees, mainly related to EU-funded irradiation opportunities through our network and, more specifically, the currently open (but soon to close!) call for proposals: <https://lnkd.in/gFU7SPM>



RADNEXT team at RADECS 2023

RADNEXT
1,295 followers
10mo • Edited • 🌐

Since Monday, our experts are participating to the Aerospace Europe Conference in Lausanne.

If you want to get more information about the project, don't miss this opportunity to talk directly with our members in our booth.

EUCASS
PAC-G Platform for Advanced Characterisation Grenoble
HEARTS



Shared booth (with HEARTS and PAC-G) at EUCASS-CEAS



RADNEXT team at NSREC 2023



Communication and dissemination

Conferences and events

For **2024**, RADNEXT was (or will be) present at the following conferences (booths or invited talks):

- RADHARD Symposium (7-8 May, Seibersdorf)
- GB-RADNEXT Workshop (12-13 June, Harwell)
- NSREC (22-26 July, Ottawa)
- RADECS (16-20 September, Gran Canaria)



Communication and dissemination

Ongoing activities: events, LinkedIn, newsletter, promotional materials, ...



Communication and dissemination

Invited talks

Invited talks by RADNEXT project members

- ➔ If you are giving a talk somewhere, let us know so we can post about it on LinkedIn
- ➔ + don't forget: short introductory presentation available (EDMS)

| | | | | | | |
|-------------|-----|--|-----|------------|------------|-----------------------|
| 2671518 v.2 | ★ 🛒 | The RADNEXT facility and research network | @ 1 | 🔴 In Work | 2022-03-21 | MATTEO CECCHETTO |
| 2712346 v.1 | ★ 🛒 | RADNEXT short introductory presentation | @ 1 | 🟢 Released | 2022-03-04 | hanne.stas@kuleuven.b |
| 2719181 v.1 | ★ 🛒 | RADNEXT presentation at Australian Space Wo... | @ 1 | 🟢 Released | 2022-03-22 | RUBEN GARCIA ALIA |
| 2733474 v.1 | ★ 🛒 | Presentation at the RADHARD Symposium 26.0... | @ 1 | 🟢 Released | 2022-04-28 | GERD LUIS DATZMAN |

 **Ennio Capria** • 2nd
Deputy Head of Business Development / Director of the IRT Nanoelec Chara...
5mo • 🌐

Single Event Upsets due to cosmic radiation are considered critical, because they can provoke, at any random instant a crash in the system or a loss of data (e.g. your blue screen in windows...). This effect is historically very important for the design of electronic systems to be used in space and in avionics. Nonetheless, with a growing exploitation of autonomous systems, i.e. in automotive and massive data farms, these effects are becoming a generalised question to be addressed in the design phase.

Pulsed Focused X-rays available at #synchrotron facilities like the ESRF - The European Synchrotron can provide a unique insight in complex electronic components to understand their sensitivity and failure mechanisms. When active areas are very much embedded and difficult to access (stacked dies, flip-chips, etc.) the penetration depth of #Xrays can be a unique asset for developers of #radhard systems.

On the 06-07/12 I had the opportunity to give a perspective lecture on the use of this novel probe, today available also in the context of the PAC-G Platform for Advanced Characterisation Grenoble, at the SERESSA School in the Politecnico di Torino. Furthermore I also had the opportunity to present the RADNEXT initiative. My warmest thanks goes to the school organisers for the invitation! Thanks to Eleonora Vacca and Corrado De Sio.



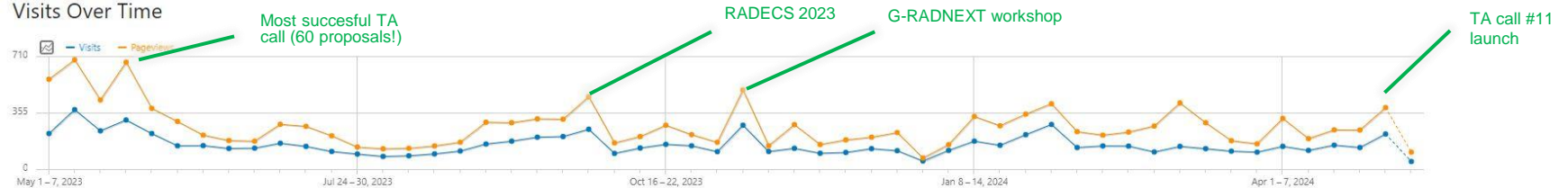
Communication and dissemination

Website statistics

- Website remains primary gateway for both project members and users (thanks David!)

May 2023- May 2024

Visits Over Time



8,044 visits \uparrow +10.1%

1 min 45s average visit duration \downarrow -19.2%

14,027 pageviews, 11,435 unique pageviews \uparrow +6.2%



Communication and dissemination

LinkedIn

- Already **1313 followers!** (+280 since previous Annual Meeting)
- And a lot of activity on LinkedIn
 - Regular posts about events (GB-RADNEXT, webinars, conferences, ...)
 - Posts about calls for beam time proposals
 - RADNEXT research in the spotlight
 - A lot of posts/tags by facility users after their irradiation experiments

→ Add your RADNEXT membership on LinkedIn!
(currently: 35 employees)

The image shows a LinkedIn profile for RADNEXT with 1,294 followers and a post from May 1st. The post is a 'Call for Proposals' for beam time, mentioning a deadline of May 31st and a link to a website. Below the post is a photo of three people in a laboratory setting. To the right, there is a 'RESTAURANT RADNEXT' menu listing various particle beams like PROTONS, TRIUMF BL1B, CNA, UMCG, PSI, NPI-CAS, HEAVY IONS, CERN SPS NA, UCL, and GSI SIS-18.

RADNEXT
1,294 followers
1yr • Edited •

Check out our **#beam #menu** for **#radiation** effects testing, and apply for free-of-cost radiation effects **#research** beamtime by May 31st!
...see more

OPENING HOURS
1 MAY - 31 MAY
OPEN 24/7

RADNEXT
RADNEXT.WEB.CERN.CH

RESTAURANT RADNEXT

PROTONS

| | | |
|----|-------------|----|
| €0 | TRIUMF BL1B | €0 |
| €0 | CNA | €0 |
| €0 | UMCG | €0 |
| €0 | PSI | €0 |
| €0 | NPI-CAS | €0 |
| €0 | | €0 |

HEAVY IONS

| | | |
|----|-------------|----|
| €0 | CERN SPS NA | €0 |
| €0 | UCL | €0 |
| €0 | GSI SIS-18 | €0 |

5 comments • 9 reposts

RADNEXT
1,313 followers
1mo •

Call for Proposals

Are you working on radiation effects on **#electronics** and seeking beam time for irradiation experiments?

Look no further! **#RADNEXT** Transnational Access is currently accepting proposals until May 31st!

This call welcomes radiation effects testing users from across the globe, spanning various sectors, including **#industry**. For detailed eligibility criteria, available facilities, and project scope, visit our website:

<https://lnkd.in/g/FUTSPM>

Don't miss this opportunity to advance your research in **#radiationeffects**. Secure your beam time now!

RADNEXT

Submit your proposal for beam time!

You and 50 others • 9 reposts



Communication and dissemination

LinkedIn

New series of dissemination of research findings through journal publications

RADNEXT
1,313 followers
1mo · Edited ·

New Open Access Publication

We're thrilled to announce the latest breakthrough from #RADNEXT members, now featured in IEEE Transactions on Nuclear Science! 🎉

This study provides a comprehensive comparison between high-energy X-ray and Cobalt 60 irradiation campaigns of MOS capacitors.

For the investigated components, the high-energy X-rays irradiation using a lead filter induced the same degradation observed when exposed to Cobalt 60 gamma rays. Moreover, the effects of post-irradiation annealing and the presence of a package lid have been also investigated.

Curious to learn more? Dive into the full open-access manuscript for a comprehensive understanding: https://lnkd.in/ecA9S_BB.

Stay informed, stay ahead! 💡
Follow us and don't miss out any news from the RADNEXT network.

#radiationeffectscs #openaccess #research #innovation

Vincent Girones, Jerome boch, Frédéric Saigné, Alain Carapelle, Arnaud Chapon, Tadeo MARAINE, Rubén García Alía

CERN UNIVERSITÉ DE MONTPELLIER
New publication in *IEEE Transactions on Nuclear Science*: **OPEN ACCESS**

Comparison of High Energy X-ray and Cobalt 60 irradiations on MOS capacitors

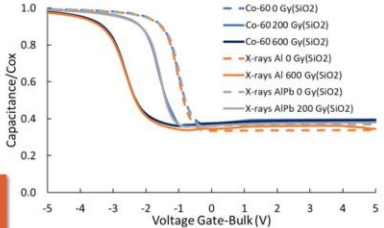
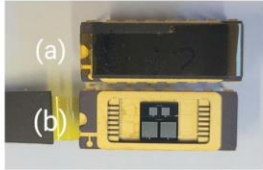
by Vincent Girones and coauthors

Can TID effects be studied in MOS capacitors using a commercial X-Ray irradiator?

YES!
High-energy X-rays irradiation with a lead filter led to the same degradation as observed in Co-60 irradiation

Highlights:

- No gap is observed between degradations by X-ray and Co-60 irradiations due to a thin layer of Aluminum (low Z) as BEOL **reducing dose enhancement effect**.
- Large shift of the flatband voltage and weak reduction of the slope of the C/V curve indicate a **dominance of oxide trapped charges**.
- Post-irradiation annealing and the presence of package lids have shown **no significant effect** on the studied MOS capacitors.



Check out full details at:
<http://dx.doi.org/10.1109/TNS.2024.3366432>

PROJET COFINANÇÉ PAR LE FONDS EUROPÉEN DE DÉVELOPPEMENT RÉGIONAL

First publication was a success of engagement.

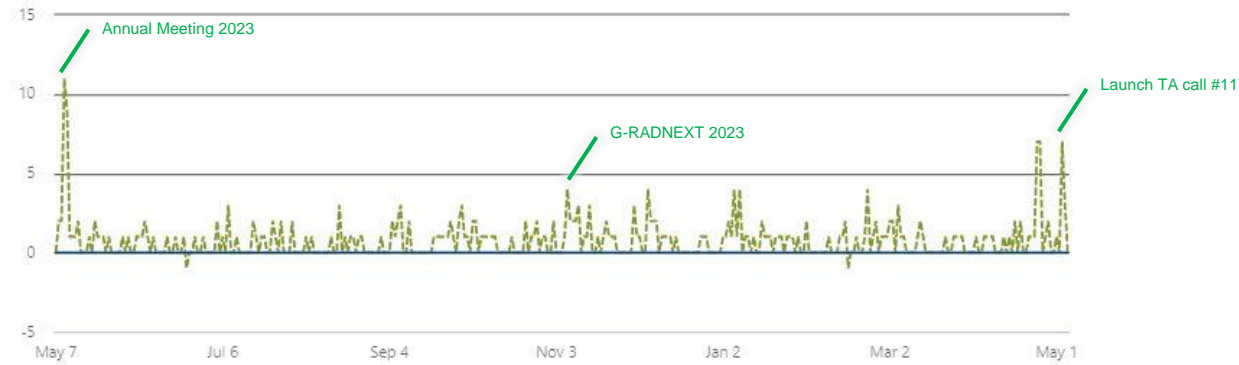


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Communication and dissemination

LinkedIn statistics

Follower metrics



Communication and dissemination

RADNEXT newsletter

- Via Spotler platform
- 5 newsletters sent
 - September 2023 | December 2023 | January 2024 | April 2024 | May 2024
 - Topics: updates and interesting news on the project, research results, TA calls, webinars, workshops, conferences ...
- Newsletter sign-up button added to website
- Mailing list: 214 contacts
 - 39 via subscription form
 - Keep spreading the word so we can expand our list!



RADNEXT News

Newsletter #1 - September 2023

www.radnext.eu | info@radnext.eu



Welcome to our first RADNEXT newsletter!

Welcome aboard the debut edition of our RADNEXT newsletter! We're very excited to have you join us.

Get ready for a selection of RADNEXT news and updates, information about the TA calls, interesting research and announcements, news on radiation effects etc.

Let's expand our vibrant community together!

Don't miss a thing!



TA call #9 is now open!



The next call for proposals is currently open **until 30 September 2023**. Submit your own proposals for free beam time and spread the word!

Hopefully we can repeat our achievement of May, where we had a record-breaking call for proposals with no less than 60 radiation effects proposals submitted!

Fun fact: after almost 2 years of beam provision, we have already accepted more than 100 EU-funded irradiation experiments in our

Communication and dissemination

RADNEXT newsletter

- Newsletter archive available on website
- **Newsletter statistics**

| Name | Send time | Acceptanc... | Open rate | Click-to-op... | Click rate |
|---------------------------------------|------------------|--------------|-----------|----------------|------------|
| RADNEXT Newsletter #1 - September... | 22-09-2023 11:00 | 97.3% | 42.9% | 19.2% | 8.2% |
| RADNEXT Newsletter #2 - December ... | 20-12-2023 16:00 | 99.5% | 45.2% | 19.1% | 8.6% |
| RADNEXT Newsletter #3 - January 20... | 25-01-2024 15:15 | 99.0% | 40.2% | 17.5% | 7.0% |
| RADNEXT newsletter #4 - April 2024 | 30-04-2024 15:20 | 99.5% | 48.1% | 22.5% | 10.8% |

→ Any ideas or input for the newsletter is always welcome via radnext.network@communication.cern.ch!



Communication and dissemination

Email signature

- Easy way to spread the word about the RADNEXT TA calls
- A new version will be created for each call
- Thanks for also adding it to your own email signature!

Rubén García Alía
CERN SY-STI/BMI – [Radiation to Electronics \(R2E\)](#) Project
[RADNEXT](#) H2020 Project Coordinator – 11th [call for beam time](#) is currently open, until May 31st 2024 – subscribe to our [newsletter](#)
[HEARTS](#) Horizon Europe Project Coordinator
[RADECS 2024](#) Conference Committee member – conference registration will open later in May – subscribe to our [newsletter](#)
Work: +41 227677555
Mobile: +41 754118490

CERN, Site de Prevestin
SY/STI-BMI, 864-2-D02
F-01631 CERN Cedex, FRANCE



RADNEXT Call for EU-funded beam time is open!

  Broad range of facilities available including heavy ions, protons, neutrons and more!

 Submission period: **1 May - 31 May**



RADNEXT

Training activities

Online and in-person



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Introduction

- WP2 also has a focus on training activities in the radiation effects domain with the main goals to :
 - educate people on the fundamentals related to radiation effects in electronics
 - attract more engineers and scientists to the field
- WP2 focuses on two important training modalities:
 - **Online** training activities via webinars and a dedicated Massive Online Open Course (MOOC) on Radiation Effects in Electronics
 - **In-person** training opportunities via the organisation of international schools and workshops



Online training activities

Webinars

- Webinar series on present and future irradiation facilities around the world:
 - **15 February** | Electronics Testing with High energy Ions at the NASA Space Radiation Laboratory – by *Michael Sivertz*
 - Recorded videos available on [RADNEXT YouTube Channel](#)
 - Stay tuned via our [RADNEXT page on LinkedIn](#) for the upcoming webinars



Subscribe to
our channel!

RADNEXT 

ONLINE WEBINAR

15 FEB

Electronics Testing with High Energy Ions at the NASA Space Radiation Laboratory

BY DR. MICHAEL SIVERTZ



Thursday 15 February

2.30 - 3.30 PM (Geneva time)

Online via Zoom

REGISTER VIA indico.cern.ch/e/nsrl



Online training activities

MOOC: RadiationX

Radiation Effects on Electronics: from Accelerators to Space

- First MOOC on the topic
 - Duration: 5 weeks (self-paced), 6-8 hours/week
 - Target audience: undergraduate and graduate students in Physics or Electrical/Electronics Engineering + young professionals and researchers
- Developed with support from MOOC team of the KU Leuven Learning Lab
- Hosted on Edx platform
- Currently in development phase of the learning materials (video lectures, screencasts, interactive quizzes, exercises, discussion forums, texts, ...)

- Expected launch date: **December 2024**



MOOC: RadiationX | Core team



- Ygor Aguiar
- Rubén García Alía

KU LEUVEN

- Paul Leroux
- Valentijn De Smedt
- Hanne Stas



- Frédéric Wrobel
- Alain Michéz



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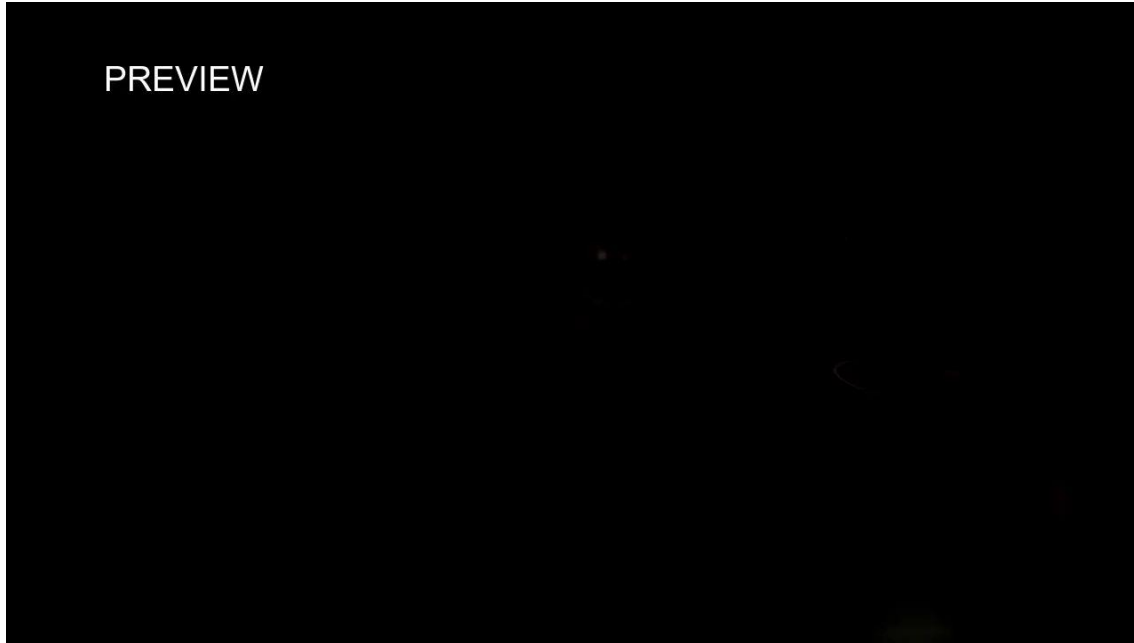
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MOOC: RadiationX | Trailer

- Trailer is almost ready
- Just missing some footage of the actual MOOC + logos on the end screen
- Behind-the-scenes:



MOOC: RadiationX | Trailer



Thank you! Questions?



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