

The RADSAGA Project from the Origin to its Future

17-19 May, 2021

RADSAGA Final Conference and Industrial event

<https://indico.cern.ch/event/983095/>

























Markus Brugger and Rubén García Alía

RADiation and Reliability Challenges for Electronics used in Space, Aviation, Ground and Accelerators (RADSAGA) is a project funded by the European Commission under the Horizon2020 Framework Program under the Grant Agreement 721624.

RADSAGA began in Mars 2017 and will run for 5 years.

Markus hands over the controls... let's hope this thing won't crash!



RADSAGA Induction Session		
 Sunday	Oct 2017, 17:00 → 22:00 Europe/Zurich	
	160/1-009 (CERN)	
17:00 → 17:15	Welcome to RADSAGA! Speaker: Cecile Granier (CERN)	🕒 15m 📍 160/1-009 
	 RADSAGA_kickoff E...  RADSAGA_kickoff E...	
17:15 → 17:30	The RADSAGA ITN Speaker: Ruben Garcia Alia (CERN)	🕒 15m 📍 160/1-009 
	 2017-10_RADSAGA...  2017-10_RADSAGA...	
17:30 → 17:45	Training Activities in RADSAGA Speaker: Sylvain GIRARD (University of Saint-Etienne)	🕒 15m 📍 160/1-009 
	 RADSAGA_InitialTE...  RADSAGA_InitialTE...	
17:45 → 18:00	RADSAGA network administration and event description Speaker: Sonia Allegretti (TERA Foundation (IT))	🕒 15m 📍 160/1-009 
	 RADSAGA_ESRs -IN...  RADSAGA_ESRs -IN...	
18:00 → 19:00	ESR Introduction	🕒 1h 📍 160/1-009 
	 1.JPG  2.JPG  3.jpg  4.jpg  5.jpg  6.JPG  7.JPG  radsaga_presentati...	
19:00 → 22:00	RADSAGA dinner	🕒 3h 

A promising start!



MONDAY, 2 OCTOBER

20:00 → 23:00 Student Networking Event (open to all RADECS Students) 3h CERN Globe

TUESDAY, 3 OCTOBER

07:30 - 08:20 RADSAGA lectures: Introduction to Radiation Effects on Electronics Other Institutes

Convener: Rémi GAILLARD

2017-09_NX RADSA... 2017-09_NX RADSA... COTS_plettner_v2.pdf COTS_plettner_v2.p... Introduction-short-O...
Irradiation character... Irradiation character...

WEDNESDAY, 4 OCTOBER

07:30 - 08:20 RADSAGA lectures: COTS radiation hardness for space Other Institutes

Convener: Dr Cristina Plettner (Airbus)

2017-09_NX RADSA... 2017-09_NX RADSA... COTS_plettner_v2.pdf COTS_plettner_v2.p... Introduction-short-O...
Irradiation character... Irradiation character...

THURSDAY, 5 OCTOBER

07:30 - 07:55 RADSAGA lectures: First radhard FPGA in 28 nm FDSOI STM process 6 (Conference Centre)

Convener: Mr Joel Le Mauff (nanosplore)

2017-09_NX RADSA... 2017-09_NX RADSA... COTS_plettner_v2.pdf COTS_plettner_v2.p... Introduction-short-O...
Irradiation character... Irradiation character...

07:55 - 08:20 RADSAGA lectures: Space Environments and Effects 6 (Conference Centre)

Convener: Dr Véronique Ferlet-Cavrois (ESA)

2017-09_NX RADSA... 2017-09_NX RADSA... COTS_plettner_v2.pdf COTS_plettner_v2.p... Introduction-short-O...
Irradiation character... Irradiation character...

Concentrated audience despite the early hour



Picture from the RADSAGA Initial Training Technical Seminar, CIGG, Geneva, 3-6.10.2017

A few days together, and already looking like a team



Robert Lewandowski





First (and for quite some time, only) scorer of the RADSAGA team

Almost last in the table, but great fun



Some more RADECS 2017 memories...



Some more RADECS 2017 memories...



From RADECS 2017 to RADECS 2018...



A very professional team!



RADECS 2018 – Ullevi Stadium



*World Cup class stadium
needed to motivate the
RADSAGA team...*

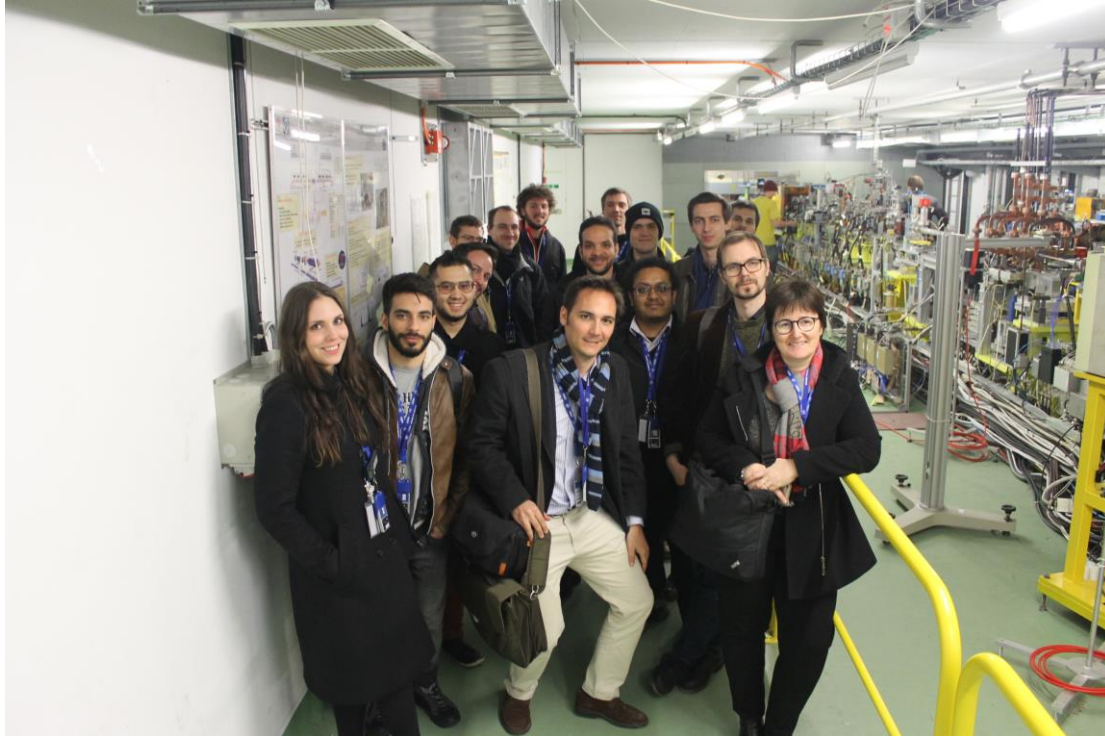




Well deserved picture with Christer Fuglesang



Initial workshop at CERN – 2018



Test, test, and then test again



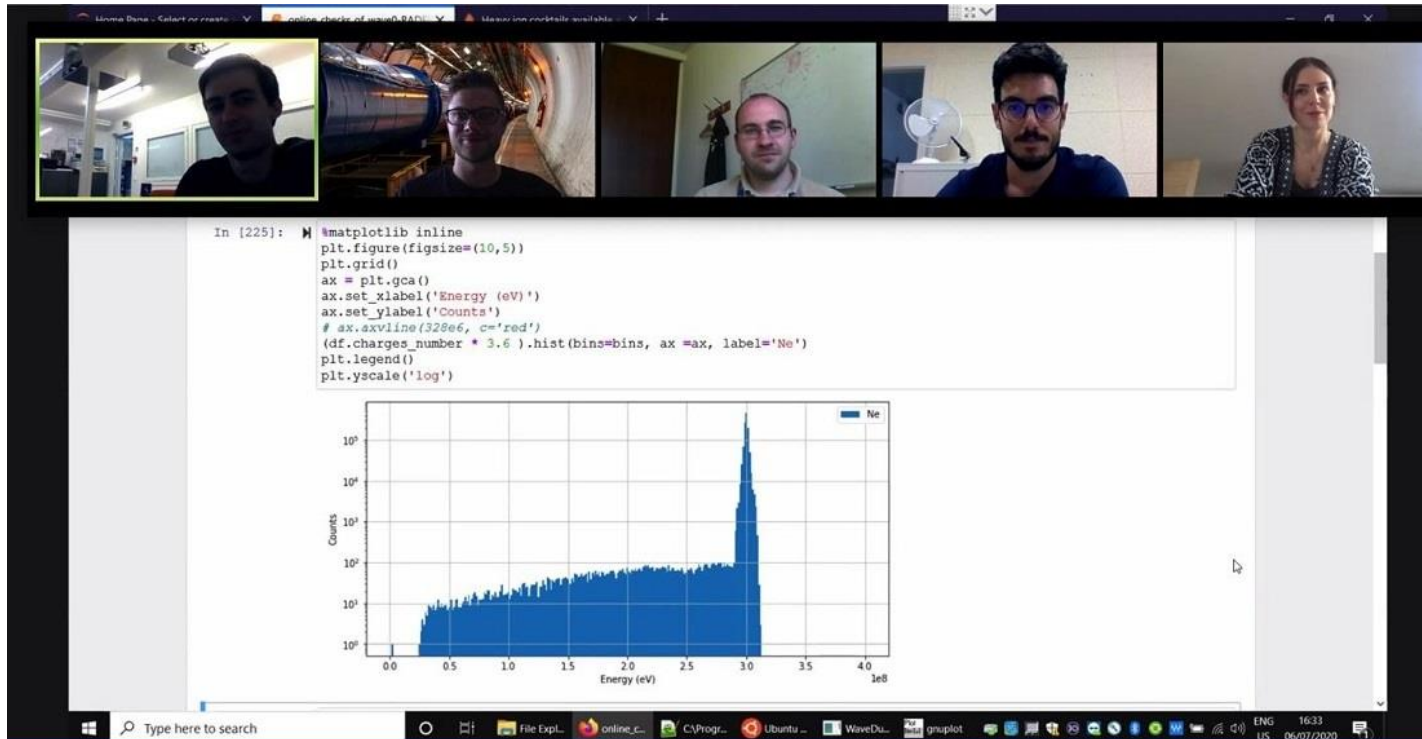
Test, test, and then test again



Test, test, and then test again



Test, test, and then test again (also remotely!)



The screenshot shows a remote meeting interface with five participants in a top row. Below them is a code editor window displaying the following Python code:

```
In [225]: !matplotlib inline
plt.figure(figsize=(10,5))
plt.grid()
ax = plt.gca()
ax.set_xlabel('Energy (eV)')
ax.set_ylabel('Counts')
# ax.axvline(328e6, c='red')
(df.charges_number * 3.6).hist(bins=bins, ax =ax, label='Ne')
plt.legend()
plt.yscale('log')
```

Below the code is a histogram plot showing the distribution of counts versus energy. The x-axis is labeled "Energy (eV)" and ranges from 0.0 to 4.0 with a multiplier of $1e8$. The y-axis is labeled "Counts" and is on a logarithmic scale from 10^0 to 10^5 . The plot shows a blue histogram with a prominent peak at approximately 3.0×10^8 eV. A legend in the top right corner identifies the data as "Ne".

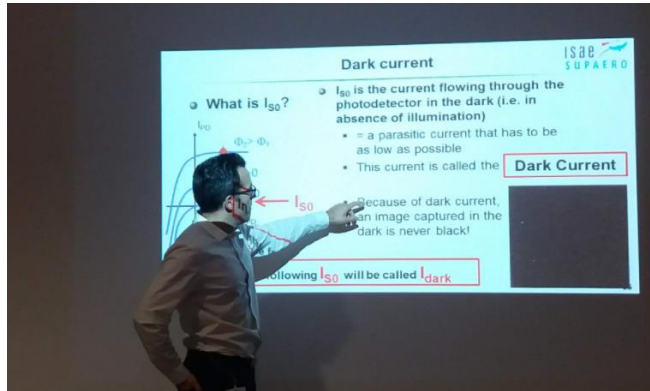
The bottom of the screenshot shows a Windows taskbar with various application icons and system information: "Type here to search", "File Expl...", "online_c...", "C:\Progr...", "Ubuntu ...", "WaveDU...", "gnuplot", "ENG US", "16:33", and "06/07/2020".



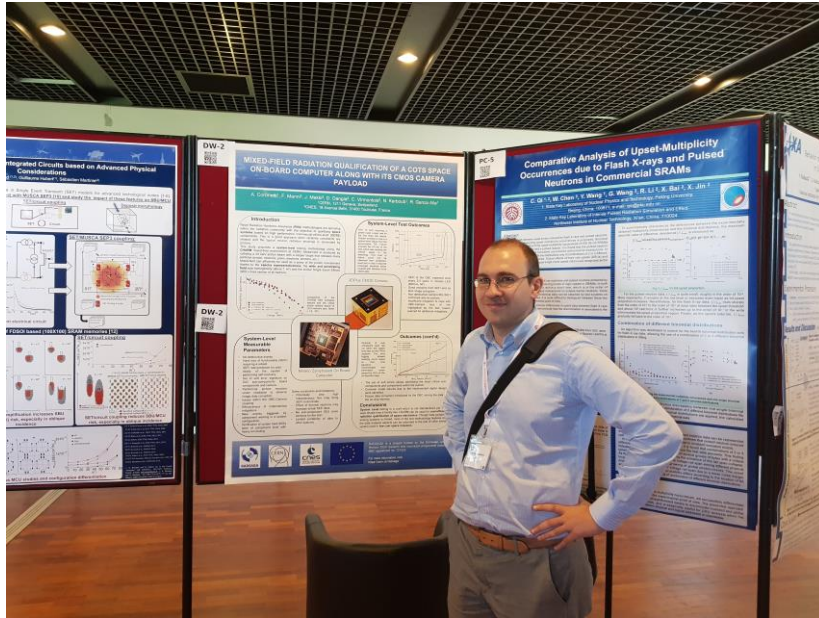


RADSAGA Mid- Term Review Meeting

Tuesday 11 Sep 2018, 00:40 → 23:00 Europe/Zurich



RADECS 2019 – proud presenters and RADSAGA ambassadors



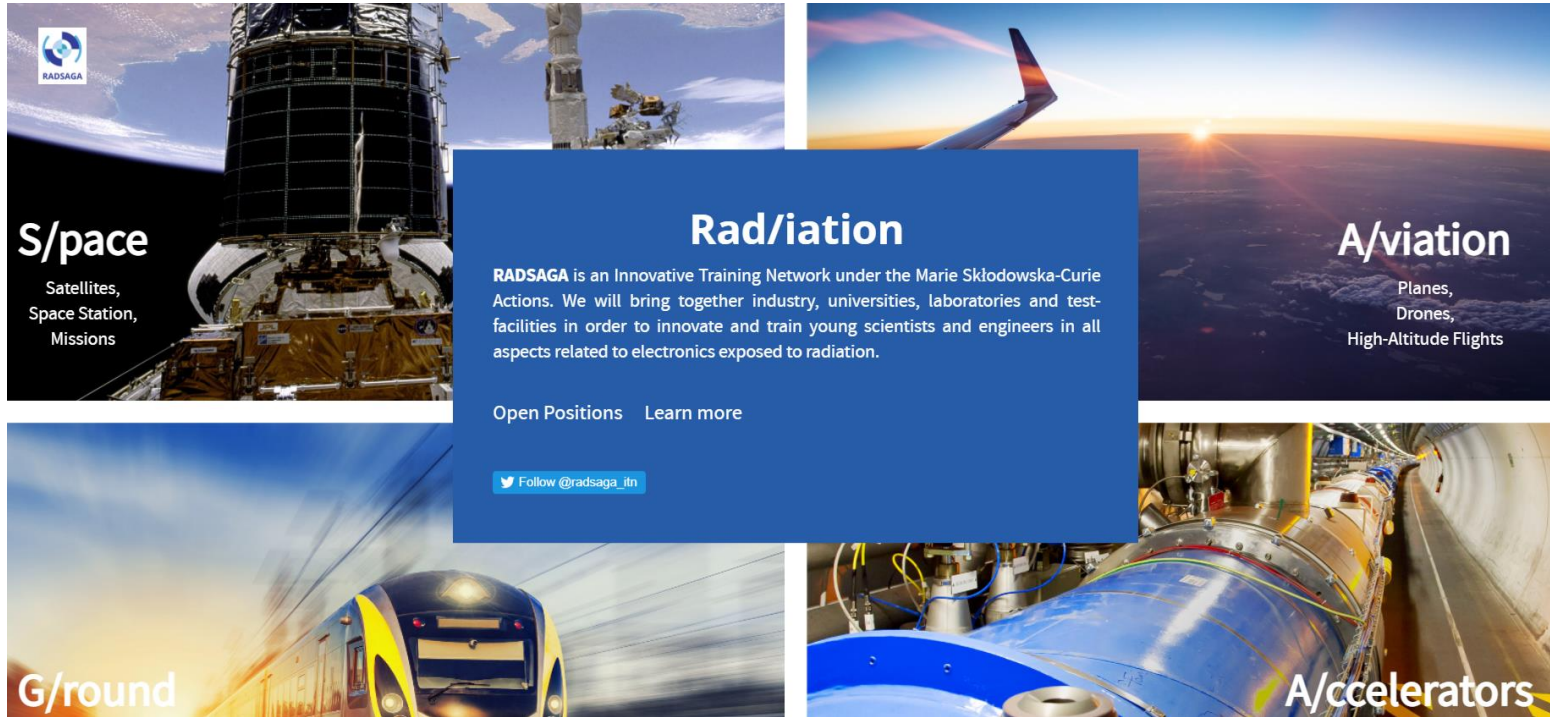


A prolific project in terms of technical and scientific production!



- ❑ 40+ open access publications, including 30+ in peer reviewed international journals
- ❑ 500+ pages of radiation test reports, all available publicly (more on this later)
- ❑ 14 deliverable reports for technical Work Packages (WP1-WP4), also publicly available
- ❑ 50+ Indico events

Very active on the dissemination and outreach fronts



S/pace
Satellites,
Space Station,
Missions

Rad/iation
RADSAGA is an Innovative Training Network under the Marie Skłodowska-Curie Actions. We will bring together industry, universities, laboratories and test-facilities in order to innovate and train young scientists and engineers in all aspects related to electronics exposed to radiation.
Open Positions [Learn more](#)
[Follow @radsaga_itn](#)

A/viation
Planes,
Drones,
High-Altitude Flights

G/round

A/ccelerators

radsaga.web.cern.ch

RADSAGA News

2021-03-22

5 Student Grants from RADSAGA to participate to RADECS 2021



The RADSAGA Innovative Training Network will be awarding 5 Student Grants that will cover the RADECS 2021 registration fees. The Grants will be awarded based on the quality and originality of the extended abstracts as evaluated by the technical committee. The awarding of the RADSAGA Grants will be communicated together with the extended abstract decision letters, early June 2021.

2021-03-22

Announcing the RADSAGA final conference and industrial event



After four years of bright achievements in the domain of radiation effects to electronics, 2021 will mark the end of the RADSAGA project. The final conference and industrial event will be held at CERN, Geneva, Switzerland on May 17-19, 2021.

Full program is available on the [Indico page](#). Registrations are now open!

What does RADSAGA mean?

RADSAGA stands for **RAD**iation and **Reliability** Challenges for **Electronics** used in

- **S**pace,
- **A**viation,
- **G**round and
- **A**ccelerators

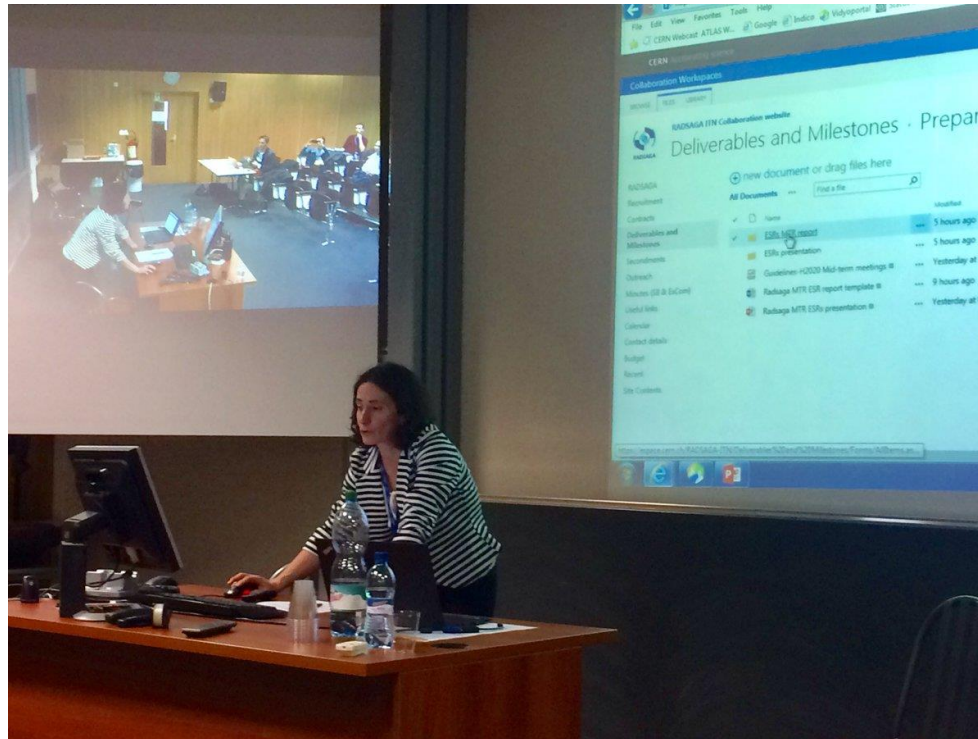
- *Very active “RADSAGA news” section, with updates of the project*
- *Link to all relevant project online spaces*

Thanks and congrats



- ❑ Huge thanks to the RADSAGA management team (including CERN EU office, legal service, finance, HR...), Work Package leaders, supervisors...
- ❑ Big congrats to the Early Stage Researchers for bringing the project forward, and for successfully completing their research objectives → best of luck for their future!!!

Special thanks to Sonia!!

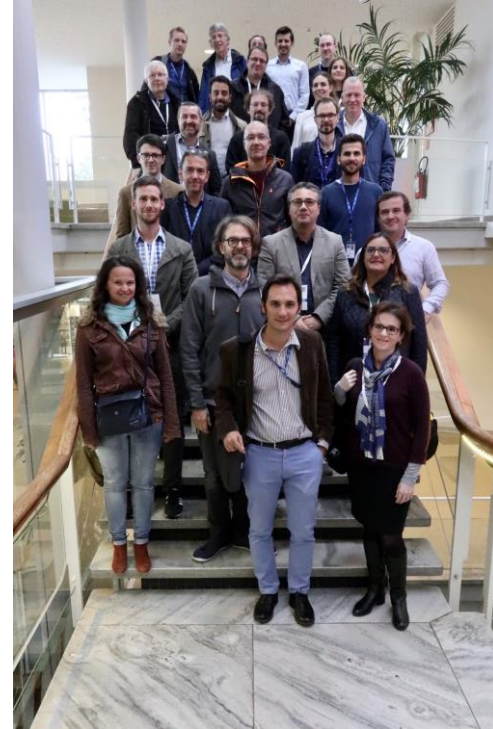


What's next? RADNEXT!

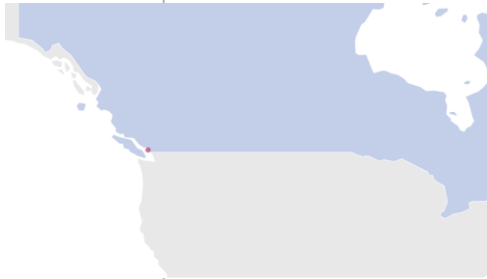


**RAD
NEXT**

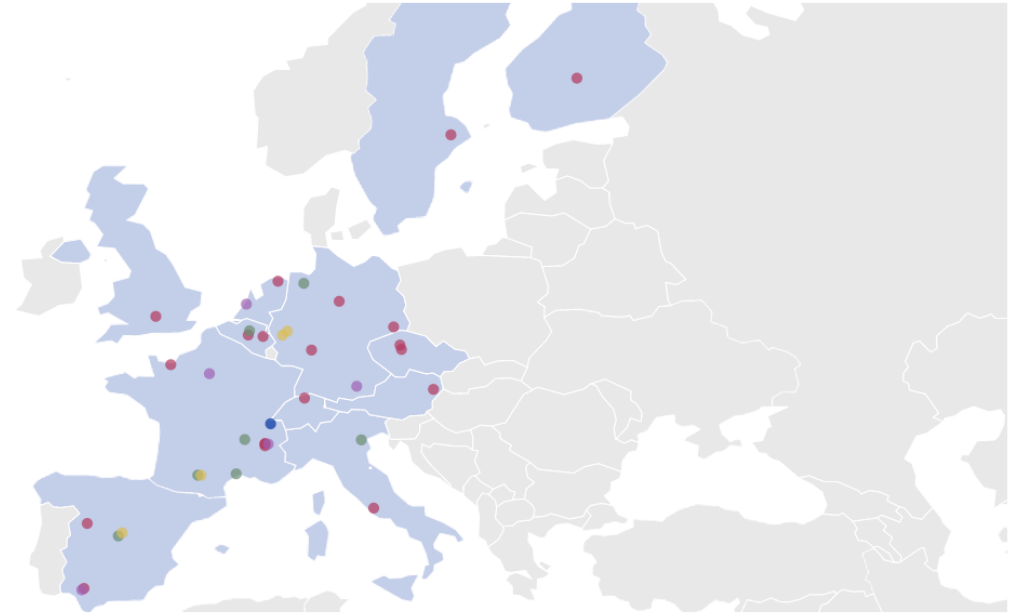
radnext-network.web.cern.ch



Partners & Associates



- Coordinator
- Facilities
- Academia
- Agencies & Institutes
- Industry



**Get your beam
time proposals
ready!**

3

From RADSAGA to RADNEXT recruitment



RADIation and Reliability Challenges for Electronics used in Space, Avionics, on the Ground and at Accelerators

A Marie Skłodowska-Curie Actions Innovative Training Network coordinated by CERN

APPLY NOW TO DO YOUR PHD WITH RADSAGA!

@radsaga_in
cern.ch/radsaga

Launch your career in domains at the forefront of technology.
Join us to do your PhD in a truly international and multidisciplinary network!

RADSAGA is looking for electronic engineers with a background in radiation effects and physicists with knowledge in electronics, radiation effects or semiconductors

Where would you like to work?

CERN - SD PLUS
Friedrich-Alexander-University of Erlangen-Nuremberg
University of Jyväskylä - KUJyväskylä
University of Groningen - University of Montpellier

RADSAGA is a Marie-Sklodowska-Curie Action, funded by the European Union's Horizon 2020 Research and Innovation programme under grant agreement 726124



PhD opportunity

Impact of circuit modelling and low energy particles on Single-Event Effect rate prediction

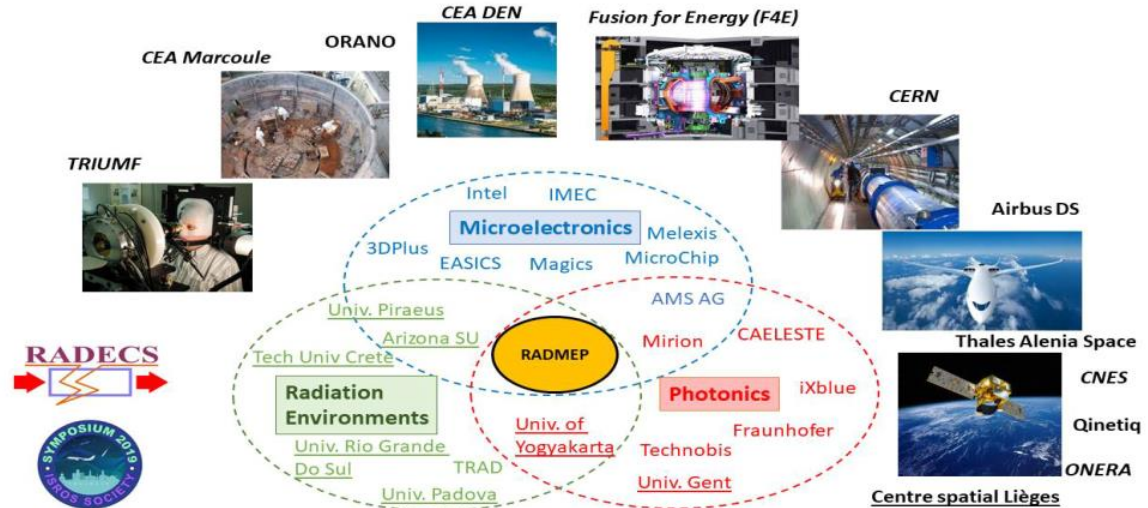


Position opening on LinkedIn

What's (also) next? RADMEP!



2-year (120 ECTS) European Master in Radiation and its Effects on MicroElectronics and Photonics Technologies (RADMEP) → master-radmep.org



Many thanks to all! Enjoy the RADSAGA final event





Stay tuned at

<https://indico.cern.ch/event/983095/>