

RADSAGA Training, Outreach and Management activities

17-19 May, 2021

RADSAGA Final Conference and Industrial event

S. Allegretti and P. Leroux

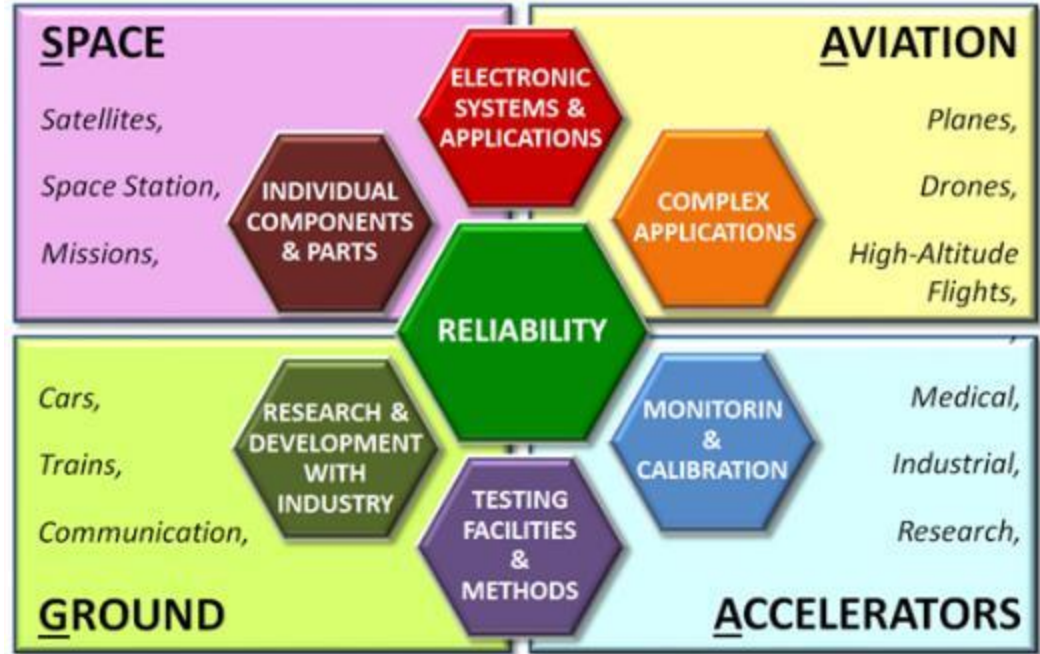
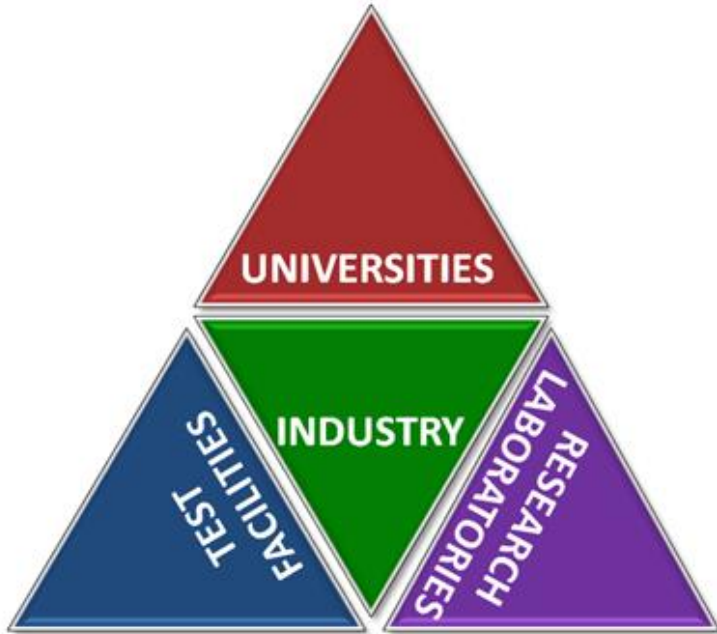
RADiation and Reliability Challenges for Electronics used in Space, Aviation, Ground and Accelerators (RADSAGA) is a project funded by the European Commission under the Horizon2020 Framework Program under the Grant Agreement 721624.

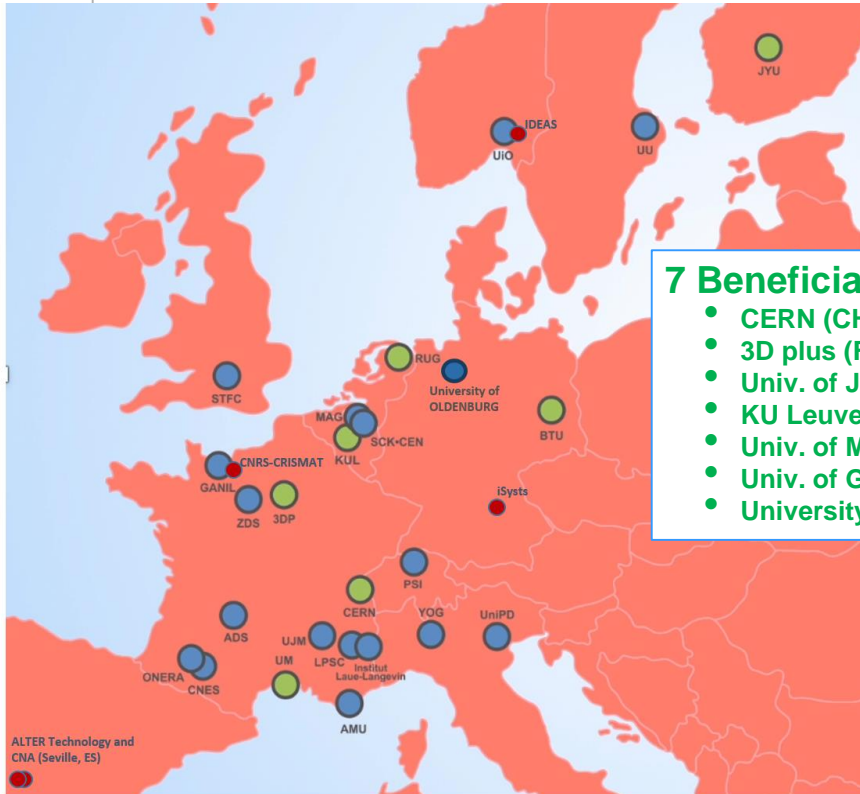
RADSAGA began in March 2017 and runs for 5 years.

Presentation outline

- I. RADSAGA ITN a training network and research project
 - ❑ RADSAGA Network Training Program
 - ❑ RADSAGA children
- II. RADSAGA content and project management
 - ❑ Managing ITNs
 - ❑ Collaborative tools
 - ❑ Data monitoring
- III. Conclusion

I. The RADSAGA network





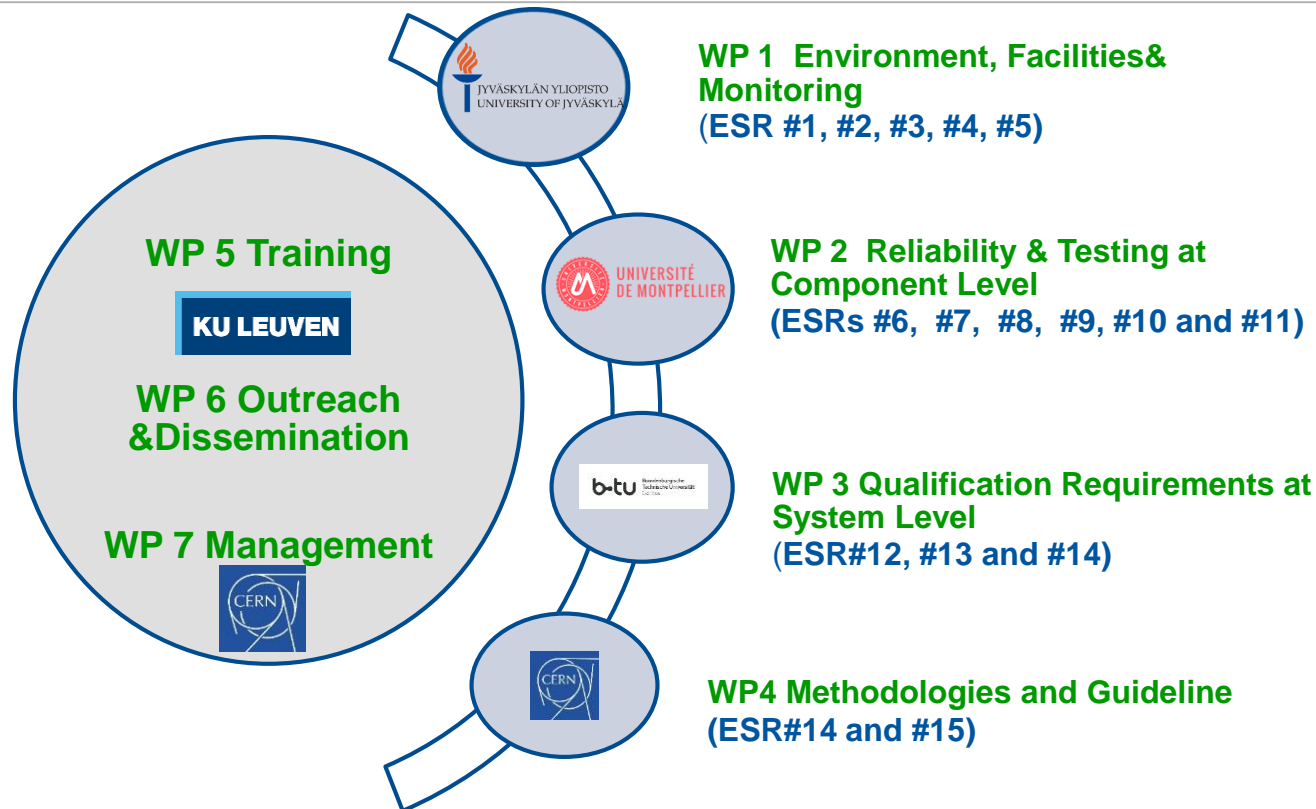
18 Partner organisations

- Univ. of Aix-Marseille (FR)
- CNES (FR)
- GANIL (FR)
- Airbus Defence and Space (FR)
- Univ. Jean Monnet Saint-Étienne (FR)
- LPSC
- Institute Laue-Langevin (FR)
- MAGICS Instruments (BE)
- STFC (UK)
- ONERA (FR)
- University of Oslo (NO)
- Uni. of Padova (IT)
- PSI (CH)
- SCK-CEN (BE)
- Uppsala University (SE)
- Yogitech (IT)
- Zodiac Data Systems (FR)
- Uni Oldenburg (DE)

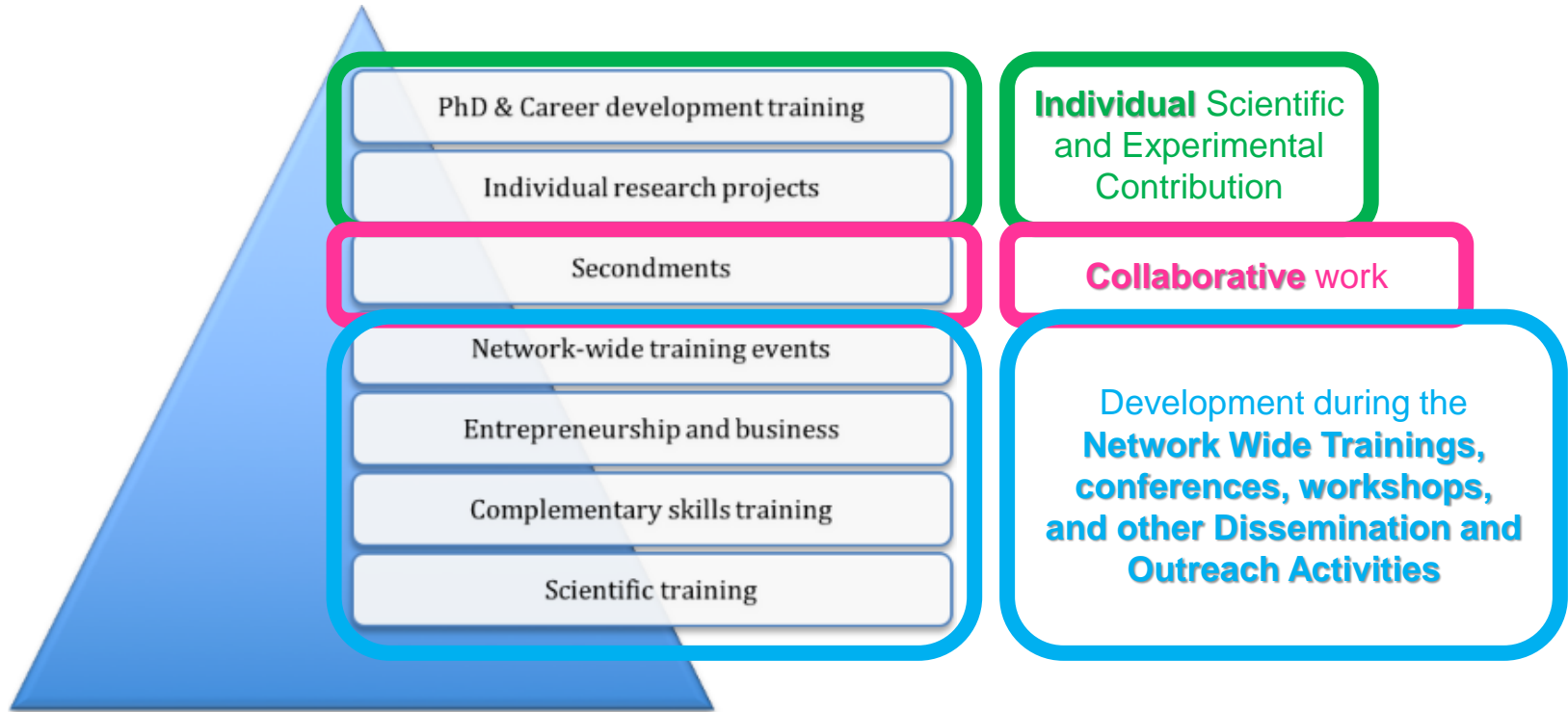
6 Associated Partners

- ALTER
- iSyst
- IDEAS
- CNA
- University of Oldebourg
- CRISMAT

I. RADSAGA research project



I. RADSAGA Training - building blocks



I. Network Wide Training



I. RADSAGA Initial Training event @ CERN



- ❑ 1-6 October 2017
- ❑ Adjacent to the RADECS conference
- ❑ 10 ESRs and 40-45 externals
- ❑ What did we do?
 - ❑ Induction and presentation session
 - ❑ Round-table
 - ❑ Hands-on radiation effects testing experience
 - ❑ Breakfast lectures at the conference centre with renowned speakers: Remi Gaillard, Cristina Plettner, Michele Muschitiello, and Joel Lemauff
 - ❑ Student Networking Event at the CERN Globe
- ❑ <https://indico.cern.ch/event/649606/>

I. RADSAGA Initial Training event





- ❑ 19-23 March 2018
- ❑ 13 ESRs, average of 10-20 externals
- ❑ What did we do?
 - ❑ Communicating to all public, science writing, outreach
 - ❑ Knowledge Transfer, Intellectual Properties, Patent search
 - ❑ Technical seminars and Laboratory Visit
- ❑ <https://indico.cern.ch/event/689492/>

I. RADSAGA Initial Workshop @ CERN



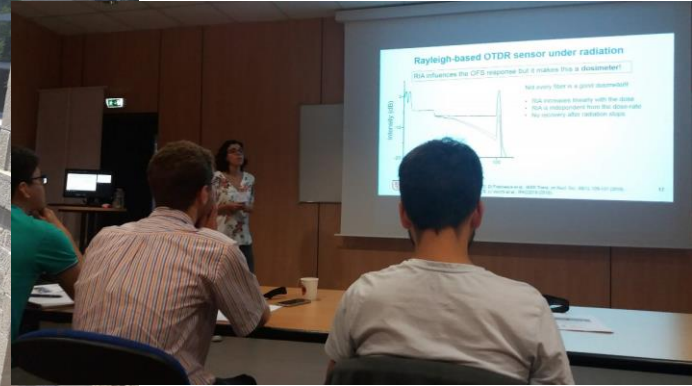
I. RADSAGA Jyväskylä Summer School

- ❑ University of Jyväskylä, 1-6/10/2017
- ❑ 15 ESRs, Average of 5 externals
- ❑ What did we do?
 - ❑ Radiation Interaction in Electronic Materials (Dr. Arto Javanainen, UJY)
 - ❑ Challenges and Radiation Performances of Advanced and Emerging CMOS Technologies (Prof. Cor Claeys, imec / KU Leuven)
- ❑ <https://indico.cern.ch/event/729607/>





- ❑ 10-14 September 2018
- ❑ 15 ESRs, average of 10 externals
- ❑ What did we do?
 - ❑ Optical fibres and radiation effects
 - ❑ CMOS image sensors
 - ❑ Radiation effects in optoelectronic devices
 - ❑ Radiation testing of Photonics
 - ❑ Radiation effects on Silicon Photonics
- ❑ <https://indico.cern.ch/event/723970/>



I. RADSAGA Specialized Training Event and Workshop @ KU Leuven



- ❑ 3-7 February 2020
- ❑ Adjacent to the RADECS conference
- ❑ 15 ESRs, average 25 students
- ❑ What did we do?
 - ❑ Brainstorming, ideation and business potential evaluation
 - ❑ Communication and pitching
 - ❑ Research presentations and round table with industry experts
 - ❑ Visit of Centre Spatial de Liege
- ❑ <https://indico.cern.ch/event/851060/>



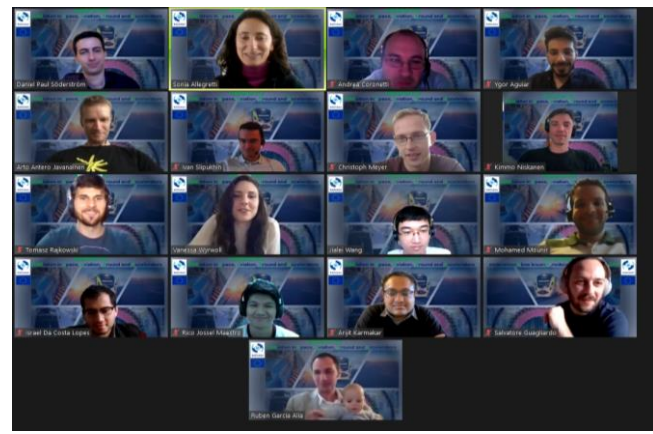


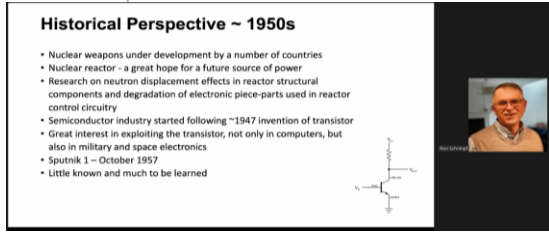
- ❑ 17-20 May 2021
- ❑ 15 ESRs, average 130 participants
- ❑ What are we doing?
 - ❑ You know
- ❑ <https://indico.cern.ch/event/983095/>

I. RADSAGA Final Conference and Industrial Event & RADNEXT Public Kick-Off @ CERN / online










Erasmus Mundus

European Joint Master in
Radiation and its Effects
on MicroElectronics and
Photonics Technologies



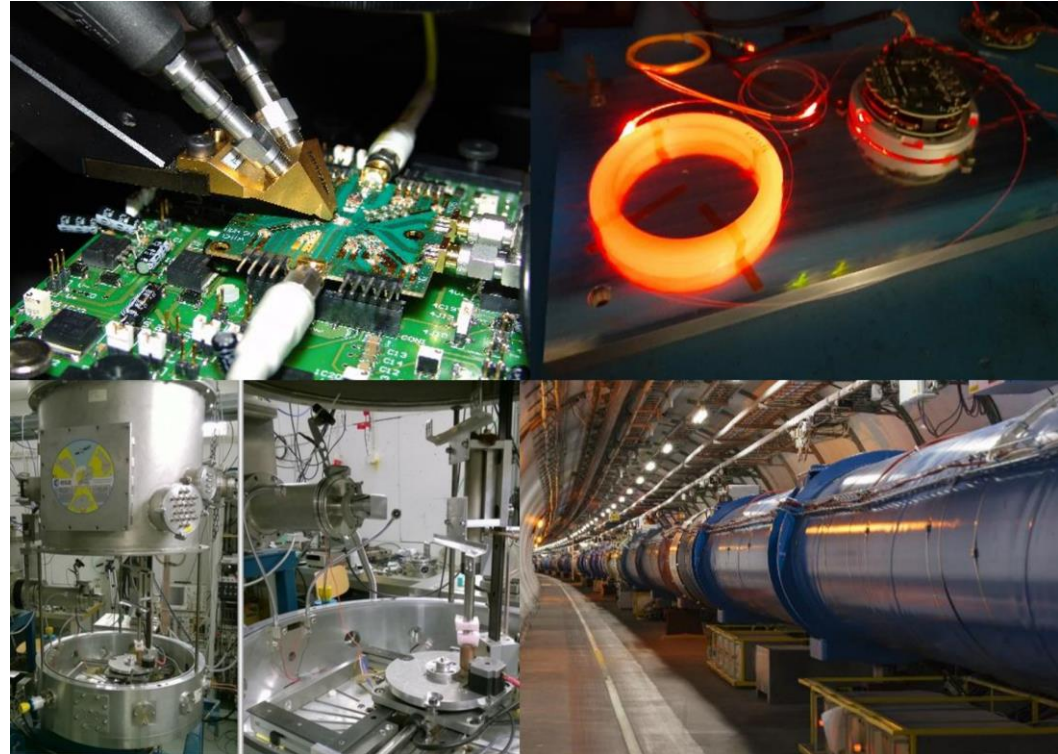
JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ



Start: 09/2021

Coordinator:

Prof. Sylvain Girard
Univ. Jean-Monnet, St.-Etienne



I.The RADSAGA future is now: RADNEXT



Presentation outline

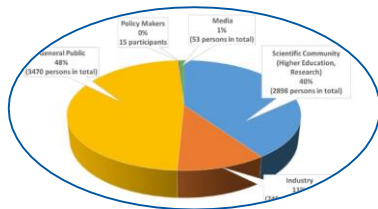
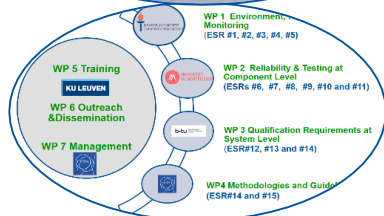
- I. RADSAGA ITN a training network and research project
 - ❑ RADSAGA Network Training Program
 - ❑ RADSAGA children
- II. **RADSAGA: content and project management**
 - ❑ **Managing ITNs**
 - ❑ **Collaborative tools**
 - ❑ **Data monitoring**
- III. Conclusion

II. RADSAGA WP7 - Management



**30 partners,
thousands of kilometers apart :
how did we pull this through?**





- ❑ Network management
 - ✓ Mentoring ESRs
 - ✓ Engaging collaboration between stakeholders
 - ✓ Being the point of contact with funding agency
- ❑ Monitoring project execution
 - ✓ Coordinating common activities
 - ✓ Deliverable and Milestone
- ❑ Content management and data analysis
- ❑ Reporting to steering committees and to EC representatives
 - ✓ Defining best practice for program management

II. Managing content – How?

Exploiting collaborative platforms to collect, analyze and monitor network wide activities and the learning experience of the ESRs

- ❑ RADSAGA ITN Participant Portal - Reporting to Funding Agency
- ❑ RADSAGA ITN Website - Dissemination and Outreach purposes
- ❑ RADSAGA Intranet - Share Point
 - ✓ **Information exchange between the network** (document templates, contact details, ...)
 - ✓ **Document co-production and data storage** - Technical and administrative reports, meeting minutes, grant amendment, validation from steering committees,...
- ❑ Indico platform
 - ✓ **Network-wide events:** events' agendas and presentations
 - ✓ **Management purposes** (Recruitments, SB and ExCom meetings,...)
- ❑ EDMS platform - **Archiving**

II. Managing and monitoring content: What?



□ Grant program execution

- ✓ **3 main reporting periods to European Community**
- ✓ **37 Deliverable and Milestone reports**
 - **23+8 reports aim at monitoring the project advances**
 - **14 technical reports for a total of 245 pages** (Deliverables of WP1 to WP4)
- ✓ **Planning & risk assessment:** Research activities, ESRs development

□ Training and communication activities

- ✓ ESRs' individual and common **training achievements**
- ✓ **Secondment** at external partners
- ✓ **Outreach and dissemination activities**

II. RADSAGA dissemination activities

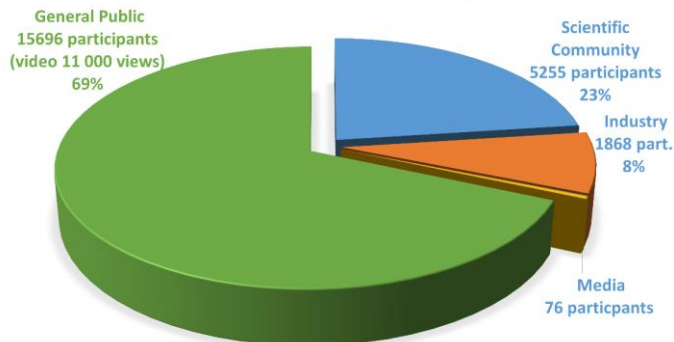
- ❑ **Presence at international conferences (presentations, posters and exhibitions)**
 - ✓ Several ESRs' presentations in RADECS #2017, #2018, #2019, #2020
 - ✓ NSREC #2019, **NSREC# 2020 (11 RADSAGA contributions)**
 - ✓ TWEPP 2018 in Antwerp (BE)
 - ✓ NSS 2019
 - ✓ Other IEEE Topical Workshops in 2019 and 2020

Reached about 5300 researchers
- ❑ **RADSAGA ITN has already produced 41 publications (+10 still ongoing)**
 - ✓ 31 articles in journals (OSA, NIMS, Microelectronic Reliability, IEEE Trans. Nucl. Sci., Aerospace)
 - ✓ 10 conference proceedings (RADECS, NSREC, other IEEE workshops)



How radiation impacts your everyday life
 YouTube 11 000+ views · 10/12/2018 · by Science animated

PUBLIC WHO ASSISTED TO THE RADSAGA COMMUNICATION EVENTS
 (22 920 TOTAL ATTENDEES SINCE 2016)



(About 50 different events – situation in May 2021)

- ❑ **Multi-channels communication**
 - ✓ Regular activities on LinkedIn, Facebook, Website
 - ✓ RADSAGA Video contest ([video](#))
- ❑ **Participation to public events**
 - ✓ RADSAGA stand at the Researcher's Night in Jyvaskyla in 2017 and 2019
 - ✓ 150th anniversary of Marie-Sklodowska-Curie (2017)
 - ✓ "Universcience" in Paris (April 2018)
 - ✓ High school and undergraduate class at CERN
- ❑ **Organisation of special activities/ event**
 - ✓ Lectures for the annual CERN High School teacher training
 - ✓ Discussion table during the RADECS Conference
 - ✓ Public presentations and lectures
- ❑ **RADSAGA young scientist awards**
 - ✓ RADECS 2019, 2020 and 2021

II. RADSAGA outreach activities



Marie Curie celebration,
CERN 2017



Booth exhibition,
Gothenburg 2018

UniverScience, Paris 2018



RADSAGA Video contest, 2018



Booth exhibition,
Leuven 2018



Researcher night,
JYU 2019



RADSAGA-CERN Magic Team
RADECS2018

RADSAGA website
and social media



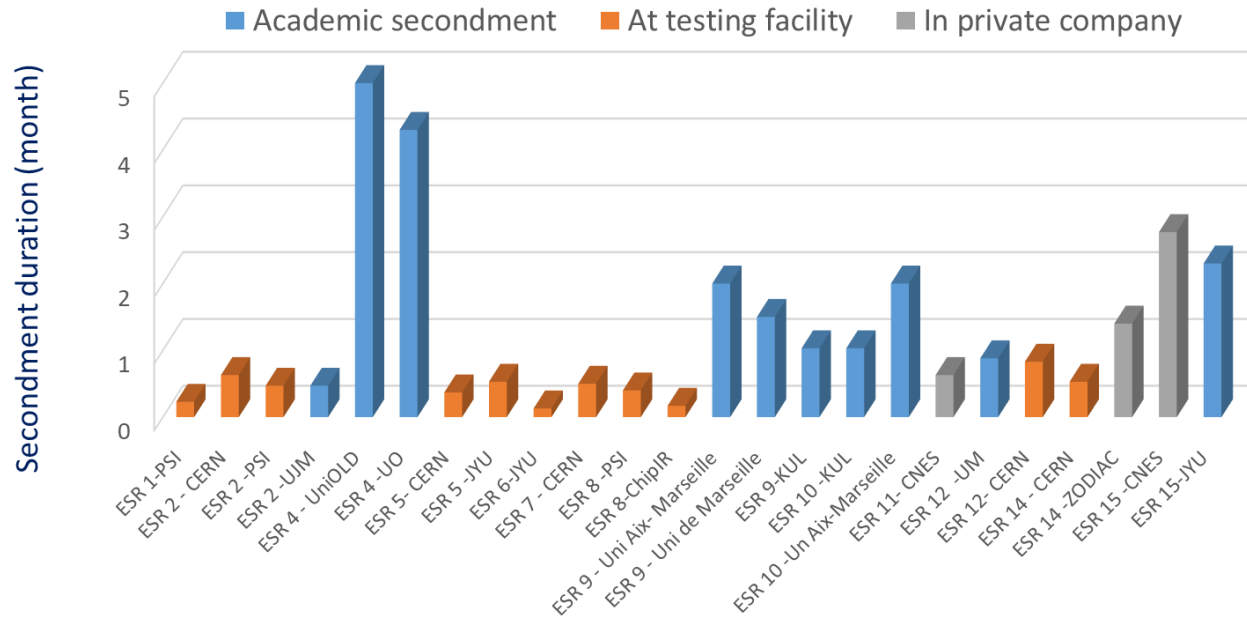
II. Monitoring collaborative research

- ❑ **The ESRs**
 - ✓ Develop an individual PhD/ research project
 - ✓ Are integrated in an international and recognized collaboration
 - ✓ Perform secondment at external partners
- ❑ **Secondments represent great exchange between academic and non-academic partners**
 - ✓ COVID 19 has raised many traveling issues
 - ✓ Remote testing became a real “testing solution”
 - ✓ In total RADSAGA had 2.5y of secondment
 - ✓ Mainly secondments have been done for experimental purposes (68% were testing at external facilities) and 32% for academic and individual development.

II. Monitoring ESRs secondment period



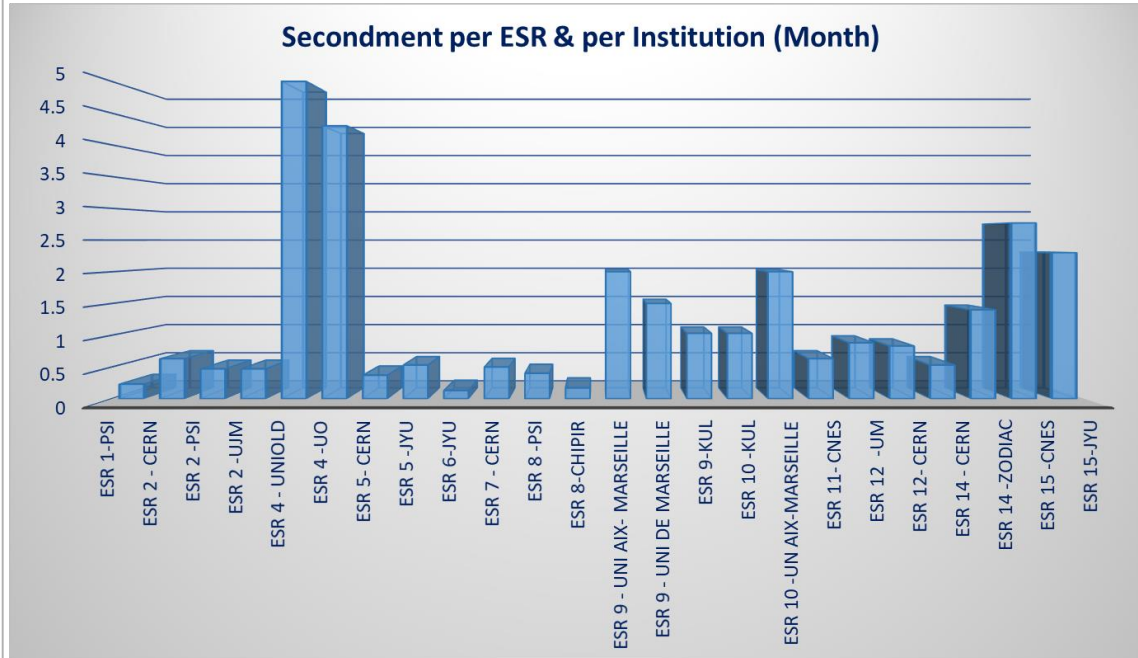
Secondment per ESRs and per Institution



20.5 months spent in testing at external facilities

About 9.5 months for academic and research purposes

II. Monitoring ESRs secondment period



The RADSAGA ESRs have already concluded a total of **30.1 months** in secondment periods (=2.5y)

Average per ESR is 2months with high standard deviation

Secondment status: general view from GA amendment 2020

III. RADSAGA ITN - Summary



- ❑ The RADSAGA ITN granted 15 Early Stage Researchers Positions
 - ❑ In total 17 fellows have enrolled in the programme

- ❑ The RADSAGA ESRs have already :
 - ❑ Contributed to leading edge scientific research, resulting in PhDs for most ESRs (more than 41 publications)
 - ❑ Participated in more than 30 full days of network-wide training in various disciplines
 - ❑ Had ~31 months of experimental and academic secondments
 - ❑ Developed an International Professional Network
 - ❑ Shadowed professionals in the fields of radiation effects on electronics and experienced working in large international collaborations

This could not happen without your attentive participation and your engagement!

We would like to thank you!





Thank you for your attention!