

WP3: Qualification requirements for integrated or complete systems

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RADSAGA Final Conference and Industrial event

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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.

❑ Objectives

- Investigation on significance of system level radiation testing compared to extensive individual component testing, closely interconnected with WP2
- Test methodology for system level testing depending on the specifics of individual facilities evaluated in WP1

3 ESRs involved in this WP



- ❑ ESR12 : Tomasz Rajkowski (Université de Montpellier)
 - ❑ Supervisor : Prof. Frederic Saigne (Université de Montpellier)
 - ❑ Co-supervisor : Pierre Xiao-Wang (3D-Plus)

« System in Package (SiP) radiation qualification requirements »

- Fundamental question on how to test highly and 3D integrated Systems in Package (SiP) and reliability investigation of test results in comparison to component by component radiation testing
- The research outputs are the design and detailed analysis of a SiP point of load converter under radiation

- ❑ ESR13 : Israel da Costa Lopes (Université de Montpellier)

- ❑ Supervisor : Vincent Pouget (Université de Montpellier)
- ❑ Co-supervisor : Ketil Roed (University of Oslo)

« Bridging methodology from component to system-level for the assessment of coupled radiation and degradation constraints in digital systems »

- Investigating the correlation between component-level and system-level assessments of the radiation constraint on digital systems for On-Bord Computing (OBC)
- Research studies resulted in a collection and documentation of testing tools and facilities required for system level tests

- ❑ ESR14 : Quentin Croenne (Brandenburg University of Technology)
Jan Budroweit (German Aerospace Center)
 - ❑ Supervisor : Alexander Koelpin (Brandenburg University of Technology)
 - ❑ Co-supervisor : Ketil Roed (University of Oslo)

- « Radiation tolerant communication links to be used for distributed systems and mixed-field radiation environments »

- Radiation testing methodology on system level for radio systems
- Structured design process for hybrid systems of radiation hard and commercial grade integrated circuits
- Risk assessment and application procedure of system test methodologies



- ❑ Articles in journal : 5
- ❑ Conference Proceedings : 5
- ❑ Deliverables : 4
- ❑ Phd manuscripts : 3 done