Reliable Electronics

Aerospace systems with high performance, real-time requirements are increasingly implemented using commercially available field programmable gate arrays (FPGAs). This requires FPGA-based systems able to operate in high radiation environments.

Competitive advantage

- Rapid, power efficient recovery from radiation-induced errors in FPGAs to achieve state-of-the-art system availability and reliability rates
- High-level synthesis of reliable subsystems to reduce design, implementation and test timeframes
- Functional verification tools to validate dynamically re-configurable FPGA designs

Impact

- Reliable FPGA-based mission critical systems designed to operate in high radiation environments
- Flexibility to rapidly adapt to changing environments and new requirements
- Reduced system lifecycle costs

More Information

Associate Professor Oliver Diessel

School of Computer Science and Engineering

T: +61 (0) 2 9385 7384
E: o.diessel@unsw.edu.au

UNSW Knowledge Exchange

knowledge.exchange@unsw.edu.au

www.capabilities.unsw.edu.au

+61 (2) 9385 5008

Successful applications

- Dynamic partial reconfiguration demonstrator, Defence Science and Technology (DST)
- RUSH reconfigurable hardware platform for exploring new reliability techniques developed and flown on EU QB50 CubeSat and Hydra mission to the International Space Station, with further missions planned
- Rapidly generating highly reliable FPGA implementations, Thales Alenia Space and General Dynamics NZ

Our partners

- Australian Centre for Space Engineering Research
- Solinov Pty Ltd