Orbital systems Satellites Transversal competencies



For more than 30 years, TRAD Tests & Radiations has been recognized for its unique expertise on radiation effects. On a daily basis, we assist companies wishing to better predict and minimize radiation effects on their products.

We offer a complete range of services and products allowing us to meet all requirements of the radiation process or applicable norms. Located near Toulouse, we have 1600 m<sup>2</sup> of laboratory space and high-tech equipment.

## **COMPETENCIES & CAPABILITIES**

We propose a complete offer on the whole radiation assurance chain:

- Radiation environment definition / analysis of RHA & other specification documents
- Part sensitivity evaluation: SEE error prediction, applicable radiation test data research & exploitation, TID, TNID tolerance, test plan optimization
- Radiation-oriented 3D modeling: shielding optimization, design validation, etc.
- Radiation software editor in the space, nuclear and medical sectors
- Analysis and solutions: mitigation solution, derating recommendation. etc.
- Electronic component testing: test bench development and test campaigns (TID, TNID, SEE)
- Material testing and characterization: thermal cycling, irradiation campaign, electrical test, etc.
- Sourcing & radiation gualification of electronic components
- Complete and tailored training courses at TRAD or at client's premises
- R&D activities, partnerships with academic entities and agencies





## **PRODUCTS & SERVICES**

We bring our expertise by offering a large and complementary panel of services:

- Electronic components radiation testing, materials characterization, component expertise (EEE)
- Test bench development for TID and SEE on basic to complex integrated circuits, memories, ASICs, FPGAs, etc.
- Technical assistance to radiation, facilities rental incl. Co60 and Vacuum

Electron irradiation facilities

- Sourcing of reliable and durable EEE components qualified to radiations (Dose and destructive single effects)
- A wide range of industry-specific software: FASTRAD® & OMERE (space applications), RayXpert® (nuclear & medical)
- On-site training courses for dose calculation, radiation space environment, radiation effects on components & materials, etc.

## **MAJOR SPACE PROJECTS & REFERENCES**

Mission LAPLACE, Mission PHOIBOS, Mission JUICE, équipements ICARE (satellites JASON et SACD), GLOBALSTAR, IRRIDIUM, PLEIADES, GALLILEO, ONEWEB, etc.

We are proud to assist major companies and agencies worldwide such as: 3D Plus, Airbus DS, CERN, CNES, E2V, ESA, IRSN, ISS-Reshetnev, NASA-JPL, Sagem DS, Sofradir, STMicroelectronics, TESAT Spacecom, Thales Alenia Space, etc.

We also cooperate with international laboratories & universities such as The MIT, Hepia, The MIT, LANL, etc.

## POINT OF CONTACT

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