

QCA ACTIVITIES PLANNED FOR 2002 - TESTING

Indicative Programme : Actual Device Types Are tbd Or If Mentioned Are Subject To Change

Radiation Evaluation of COTS Devices, Phase 3, Hirex (F)

Large Capacity Memories (SRAM, DRAM, EEPROM, Flash)

Radiation Pre-Evaluation of FPGA, Phase 5 SES (S)

SEU testing of Actel 54S... and Xilinx types at high clock frequency

Radiation Testing of Optocouplers (TID, SEE, Proton, Neutron)

Radiation Testing of Commercial Power MOSFET (non-US types)

Transient Effects Characterisation on Linear Device types

Characterisation of APS (STAR-250 & IRIS-2, Fillfactory) & CCDs (TH7890M & TH7863D, Atmel, CCD57-10 & CCD55-20, Marconi Applied Tech.)

& many more part types under consideration (mostly dependent on project need confirmation)



ESTEC, 09.04.2002



D/TOS-QCA Radiation Effects and Component Analysis Techniques Section

Final Presentation Day 2002

QCA ACTIVITIES PLANNED FOR 2002 - STUDIES

Utilisation of Pulsed Laser for SEE Testing

continuation of activities started with Hirex (F) & Matra BAe Dynamics (UK)

Influence of the Tilt Parameter during SEE Characterisation with Heavy Ion Beams (UCL (B))

Radiation Effects in Cryogenic Electronics & Advanced Semiconductor Materials, Ph.2 (IMEC (B))

RadFET Development and Characterisation (NMRC, IRL)

Miniature Radiation Monitor (SENSYS (NL) // Matra BAe (UK))

SENSYS MRM prototype to flying on PROBA

Displacement Damage Study - “NIEL Tool” (University of Cologne (D))



D/TOS-QCA Radiation Effects and Component Analysis Techniques Section

ESTEC, 09.04.2002

Final Presentation Day 2002

QCA ACTIVITIES PLANNED FOR 2002 - COLABORATIVE & SUPPORT TO R&D

Miniature SREM Development (with TOS-ESM, Contraves Space (CH)), contin.

**Low Power, Radiation Tolerant Microelectronic Design Techniques (leader : TOS-ESM)
in the frame of Galileosat NSGU Support Technologies Progr. & TRP**

New Technology (MH2-RT) and Component Developments at Atmel (with CNES)

**Following the successful test campaigns in 2001, 2 more are scheduled in 2002 to explore and
enhance the complementary capabilities (w.r.t. HIF) of the JYVÄSKYLÄ (FIN) facility
for component testing (considered as potential 3rd ESA Radiation Test Facility)**



ESTEC, 09.04.2002

D/TOS-QCA Radiation Effects and Component Analysis Techniques Section



Final Presentation Day 2002

QCA ACTIVITIES PLANNED FOR 2001 - INSTRUMENTS / FACILITIES

SREM Batch Procurement : de facto completed

**confirmed/foreseen missions : PROBA, PROBA 2, ROSETTA, GSTB, HERSCHEL,
PLANK, GOCE, (IREM on Integral)**

New Generation SREM development under discussion

Component Technology Test Bed (CTTB) in advanced state of preparation

Several flight opportunities for Radiation Instrument Packages under discussion

**Gammabeam at ESTEC : Co60 Re-Load completed in November 2001 (2000 Curie)
Test Control & Support Improvements largely completed
Test opportunities available**



ESTEC, 09.04.2002



D/TOS-QCA Radiation Effects and Component Analysis Techniques Section

Final Presentation Day 2002

QCA Homepage and ESA RADIATION EFFECTS DATA BASE

<https://escies.org> => Enter => Public Area => Radiation

The Presentations of today, the 5th QCA Presentation Day will be posted there

Major update of the Data Base will be complete by the end of April 2002

What We Would Like to Have

Is Your Feedback - Comments and Suggestions

Work in progress on

ECSS E-20-02 Standard on Method for the Calculation of Radiation Effects and Margin Policy

ECSS Q-60-0x Standard on Radiation Hardness Assurance

Short Course(s) on Radiation Effects for project engineers (at first for ESA internal purposes)



QCA ACTIVITIES PLANNED FOR 2002 - Upcoming Meetings

NSREC 2002

IEEE Nuclear and Space Radiation Effects Conference

July 15 – 19, 2002

Pointe South Mountain Resort – Phoenix, Arizona

.....

RADECS 2002 Workshop

Radiation Effects on Components and Systems

September 19 – 20, 2002

University of Padova, Italy

.....

RADECS 2003 Conference

Radiation Effects on Components and Systems

September 15 – 19, 2002

Huis ter Duin, Noordwijk, The Netherlands



D/TOS-QCA Radiation Effects and Component Analysis Techniques Section

ESTEC, 09.04.2002

Final Presentation Day 2002