



# **RADWG 7<sup>TH</sup>**

**25<sup>TH</sup> AUGUST 2011**

G. Spiezia (EN/STI/ECE)

# R2E review

Title	Speaker	Key Words	Length
Environment and test facilities	K. Roed/M. Brugger	peculiarity of radiation field, quantities, test facilities	20'
Test strategy	G. Spiezia	Time constraints, facilities, test methods and requirements	20'
Radiation test results: PSI	G. Spiezia /P. Peronnard	Summary of results and impact on mitigation actions	15'
Radiation test results: CNRAD	J. Mekki		15'
Radiation test results: H4IRRAD	Tbd		15'
uFIP on FipDiag	J. Palluel		15'
nanoFIP	E. Gousiou		15'
Summary of Equipment failures	G. Spiezia		20'

- ❖ A summary will be presented for PSI, CNRAD and H4IRRAD
- ❖ The input of the user is required (CNRAD and H4IRRAD)!

# PSI

1. Agreement is ready and approved. Last bureaucratic steps missing (signatures and copies)
2. PSI test– 2-5 September 2011
  - Main focus on Opto-couplers and comparators
  - Tight schedule. Some test can be reported to October
    - CTR investigation (opto)
    - Time response (opto)
    - SET (opto)
    - SET with  $dV/dt$  (opto)
    - SET on comparators
3. Next test on Mosfet. Test preparation to be done

# CNRAD

- CNRAD 31<sup>st</sup> August
  - PLC from EN/ICE:
    - PLC unit and power supply under test to investigate the failure mode
    - Remote reset of the hardware
    - Remote reboot of the PLC
    - Last connections to be verified
  - BLM: new test
  - QPS: cont
  - Power converter:
    - Postponed
  - LED:
    - Moving to higher fluence

# Events in the tunnel

- Doubtful cases: some will remain but many can be clarified
- List sorted by equipment and effective date
- More information are on the radwg website

Title	Effective Date	caused by SEE	LHC Fill #	Equipment type	event type	Area	LHC point
PAD screens, P8	21/08/2011	TO BE CONFIRMED		Access	other	UJ87	Point 8
MAD door problem in UJ23	04/08/2011	TO BE CONFIRMED		Access	underground intervention	UJ23	Point 2
PIC in UJ16	07/08/2011	TO BE CONFIRMED	2007	B/P/WIC	soft SEE failure	UJ14	Point 1
PIC in UJ14	05/08/2011	TO BE CONFIRMED	2005	B/P/WIC	soft SEE failure	UJ14	Point 1
PIC PLC in UJ56	04/08/2011	TO BE CONFIRMED	2001	B/P/WIC	soft SEE failure	UJ56	Point 5
<b>Biometry in Uj14 Uj16</b>	<b>09/05/2011</b>	<b>TO BE CONFIRMED</b>		<b>Biometry for gate access (PAD)</b>	<b>other, underground intervention</b>	<b>UJ14, UJ16</b>	<b>Point 1</b>
Collimation system - Power supply	30/07/2011	TO BE CONFIRMED	1992	Collimation	hard SEE failure, underground intervention	UJ16	Point 1
Power supply Collimator	13/06/2011	TO BE CONFIRMED	1865	Collimation	hard SEE failure, underground intervention	UJ14	Point 1
Power supply- Collimator	01/06/2011	TO BE CONFIRMED	1835	Collimation	hard SEE failure, underground intervention	UJ56	Point 5
US85 trip of cold-compressor	13/08/2011	TO BE CONFIRMED	2025	CRYO	hard SEE failure, soft SEE failure	US85	Point 1
Profibus-Positioner	12/06/2011	TO BE CONFIRMED	0	CRYO	soft SEE failure	UJ14	Point 1
IGBT-UPS	28/05/2011	TO BE CONFIRMED	0	EN/EL	hard SEE failure, underground intervention	US85	Point 8
UPS in UJ56	03/05/2011	TO BE CONFIRMED		EN/EL	beam loss, underground intervention	UJ56	Point 5

Not SEU related @R. Nunes

It will remain to be confirmed

Remain to be confirmed. Rad test to do

Remain to be confirmed. Few statistics

Title	Effective Date	caused by SEE	LHC Fill #	Equipment type	event type	Area	LHC point
PC RQX.L5 problem	17/08/2011	TO BE CONFIRMED	2030	EPC	soft SEE failure	UJ56	Point 5
Power-Converter Problems	22/07/2011	TO BE CONFIRMED	1966	EPC	soft SEE failure, underground intervention	UJ14, UJ56	Point 1, Point 5
PC failure: RPLB.UJ43.RCBCH1 O.L4B2	16/04/2011	TO BE CONFIRMED		EPC	hard SEE failure	UJ43	Point 4
problem on RQT13.R7B2	09/03/2011	TO BE CONFIRMED		EPC	soft SEE failure	DS, RR77	Point 1, Point 7
strange behavior of auxilliary supplies of 60A convertors (proche 12R7)	24/11/2010	TO BE CONFIRMED		EPC	other	close to 12R7	Point 7
Power-Converter Failure (Alim) in UA87	03/11/2010	TO BE CONFIRMED		EPC	hard SEE failure	UA87	Point 8
QPS- Power converter (No PM)	09/08/2011	TO BE CONFIRMED	2010	EPC, QPS	beam loss	RR77	Point 7
FIP communication problem	24/06/2011	TO BE CONFIRMED		FIP, QPS	soft SEE failure	All, DS, LSS	Point 1, Point 8
Power-Converter	21/07/2011	TO BE CONFIRMED		Power Converter	soft SEE failure, underground intervention	UJ14, UJ16	Point 1
60A Problem	24/07/2011	TO BE CONFIRMED		Power Converters	beam loss	ARCs	Point 1, Point 2
QPS event in P5	07/08/2011	TO BE CONFIRMED	2008	QPS	soft SEE failure	UJ56	Point 5
QPS	21/07/2011	TO BE CONFIRMED	0	QPS	beam loss, underground intervention	ARCs, DS, UJ76	Point 6, Point 7
QPS communication problem	20/07/2011	TO BE CONFIRMED	0	QPS	soft SEE failure	ARCs, DS	Point 5, Point 6

Test in the lab. Unlikely to be an SEU. @Q. King

Seu on the filter but channel masked by the software. @Q. King

It will remain to be confirmed.

Title	Effective Date	caused by SEE	LHC Fill #	Equipment type	event type	Area	LHC point
QPS Problems (tbc)	06/05/2011	TO BE CONFIRMED		QPS	soft SEE failure	ARCs, DS	Point 1, Point 7, Point 8
QPS 'events' to be confirmed	29/04/2011	TO BE CONFIRMED		QPS	underground intervention	ARCs, DS, LSS	Point 2, Point 3, Point 4, Point 7
QPS power supply issue below Q9	08/03/2011	TO BE CONFIRMED		QPS	other, underground intervention	DS	Point 7