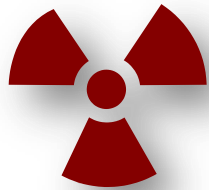


# The FGClite Project



Status Update and Requirements

9th R2E Project meeting

TE-EPC-CC R2E Team

# Radiation Testing

## ■ TRAD – UCL Heavy Ion Tests

- ❑ Tests of ADS1271B and 1281 ongoing (this week)
- ❑ Slawosz Uznanski visited TRAD twice, presently assisting in tests
- ❑ Preliminary results next week...

## ■ H4IRRAD – Slot 1

- ❑ DAC test: 3 x MAX5541
- ❑ ADC test: 3 x ADS1271B (previously exposed in 2011)
- ❑ Dallas 1-wire test: 50 x 2401 (ID) + 50 x 18B20 (ID + temperature)
- ❑ SRAM tests in preparation for slot 2...

## ■ PSI – Protons tests Foreseen

- ❑ Voltage Regulator test: 30 x LP3990MF-1.8 (1.8V)
- ❑ Voltage Regulator test: 30 x LM340MP-5.0 (5.0V)
- ❑ Voltage Regulator test: 30 x LP2980AIM5-3.3 (3.3V)
- ❑ Voltage Reference test: MAX6350 (5.0V)

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# Manpower

- Arni Dinius – Project Leader
- Benjamin Todd – Hardware Engineer
- Gillies Ramseier – Analogue Engineer
- Stephen Page – Software Engineer
- Slawosz Uznanski – Radiation Expert
- R2E Technician – Selection Board May 15<sup>th</sup>
- David Millar – Technical Student – July 1<sup>st</sup> – 6 months – Dallas 1-wire

# LHC operation

## ■ Analysis of FGC failures

- ❑ Slawosz will be responsible for trying to understand which events are really due to radiation
- ❑ Two cases require analysis. *Sometimes no conclusions can be reached:*

<p><b>RPHGB.RR17.RD2.R1</b></p> <p>10/04/2012 12:00 (00:15:00)</p> <p>FGC.WARNINGS : L_MEAS RADIATION UNDER INVESTIGATION</p>	<p><b>LHC</b></p> <p>RPHGB RR17</p>	<p> Miguel Cerqueira Bastos</p> <p>Record created by Miguel Cerqueira Bastos the 10/04/2012 at 11:57 IMEAS warning generated by two SIGNAL_JUMP on channel A, which originate a DEAD_FILTER on the MEAS.STATUS. SIGNAL_JUMP probably linked to the ADC. I reseted the warning and will wait to see if it happens again.</p> <p>ID:54080</p>
<p><b>RPMBB.RR17.ROD.A12B1</b></p> <p>13/04/2012 19:15 (03:30:00)</p> <p></p> <p>VS.FAULTS : AUX POWER SUPPLY / FANS VS.FAULTS : OUTPUT STAGE POWER SUPPLY RADIATION UNDER INVESTIGATION</p> <p>• 3165 = RMMB (___ - Standard) :Power Module:[600A 10V 4Q] - CI000346 moved from RR171 (Level1) to SD1/R-501 (Radiation Survey) and replaced by CI000158 • 20796 = Repair of HCBMMB - CI000346 pending - with fault(s) IAC-DC Crash)</p>	<p><b>LHC</b></p> <p>RPMBB RR17</p>	<p> Marcel Tignolet  Ludovic Charnay</p> <p>La CCC appelle pour le convertisseur qui présente les fautes OUTPUT_STAGE_POWER_SUPPLY et AUX_POWER_SUPPLY_FANS, à distance je vois toutes les fautes actives, le V_MEAS à 0.7V, le reset est impossible, je demande un accès pour changer le module.</p> <p>Intervention longue (3h30): Trajet =1h PAD HS (biométrie) =1h MAD (ouverture/fermeture intempestives des portes) =1/2h min Intervention =1h</p> <p>ID:54123</p>
<p><b>RPLA.18R7.RCBV17.R7B2</b></p> <p>16/04/2012 14:30 (00:30:00)</p> <p></p> <p>FGC : OFFLINE RADIATION UNDER INVESTIGATION</p>	<p><b>LHC</b></p> <p>RPLA R78</p>	<p> Arnaud Bessonnat</p> <p>This record has been linked by logbook : <a href="#">54177</a> -</p> <p>Record created by Arnaud Bessonnat the 16/04/2012 at 15:02</p> <p>Reboot du FGC a 14h21 (Voir courbe Timber). Les valeurs de la PSU sont correctes (Voir screen FGC Run+). On retrouve la déconnexion puis reconnexion du convertisseur dans le log du Gateway. Pas d'autres informations sur la cause dans ce log.</p> <p>Reset du Convertisseur -&gt; Ok Précycle -&gt; Ok</p> <p>Je préviens la CCC que la cause reste inconnue et qu'il est peut être plus sage de mettre ce convertisseur de coté.</p> <p>ID:54133</p>

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# Development Milestones

- 1<sup>st</sup> prototype expected by Autumn
- 30 prototypes = FGClite segment by the end of the year
- Final design = early 2014
- Production and testing = 2014
- Installation = 2015

# Radiation Testing Milestones

- H4IRRAD – only available in 2012...
  - Two more slots left...
  - Cover all aspects as much as we can...
  - Type testing & Batch testing
  
- PSI – 2012-13...
  - By the end of 2013 = finished procurement and testing
  
- Heavy Ion Tests
  - Open question – which components we can afford to test for SEL.