

Introduction to the Electronics Session

Ph. Farthouat, CERN

Coordination & Information Exchange Bodies

- ATLAS and CMS electronics communities regularly meet during the ACES (ATLAS CMS Electronics for SLHC) workshops
 - ACES-1, -2, -3, -4 in [2007](#), [2009](#), [2011](#), [2014](#)
- Topical Workshop on Electronics for Particle Physics ([TWEPP](#))
 - Larger audience than HL-LHC however good review of the work done for (HL-)LHC
 - Has been dedicated to LHC until 2006. Good source of “historical” information

Common Projects in Electronics

- There are common projects since a number of years
 - White Paper Projects as of 2008
 - Identified necessary developments
 - IC technologies and Intellectual Property (IP) blocks
 - **Radiation hard** Gbps Optical Link
 - **Radiation and magnetic hard** DC-DC converters
 - These projects have produced deliverables
 - DC-DC converters being produced (~10000 expected)
 - GBT chipset and Versatile Link in preproduction (~50000 GBTX)
 - New frame contract for IC technologies (65 & 130 nm TSMC)
- RD53 is moving ahead toward the design of prototype pixel readout chip for ATLAS and CMS
- Commonalities are more and more considered
 - New fields could benefit from common work

Agenda for today

- Last year we selected 4 subjects for which common work is still to be done to meet HL-LHC requirements
 - *IC Design and Technologies*
 - *Power Distribution*
 - *Modular Electronics*
 - *Links*
- This year:
 - A review of the on-going developments for the *trackers, calorimeters and muon detectors*
 - Three subjects where common work is to continue
 - *Use of FPGA in radiation environment*
 - *The high speed links*
 - *The IC technologies*

Back-up

Preparatory Group Composition

- Including speakers
 - Alex Kluge (ALICE)
 - Philippe Farthouat, Alex Grillo, Francesco Lanni, Robert Richter, Osamu Sasaki, Arno Straessner (ATLAS)
 - Paul Aspell, Jorgen Christiansen, Tullio Grassi, Magnus Hansen, François Vasey (CMS)
 - Ken Wyllie (LHCb)
 - Michael Campbell, Paulo Moreira (CERN)