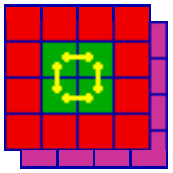


Highlights and lowlights:
RAL, 8–10 November 2001

- Personal view, not a comprehensive summary of all that was presented and discussed.
- Apologies for anything important that's missed (tell me).
- If you think anything is mistaken or objectionable please say so!

- The categories are as follows:

  \+ a positive, or mainly positive, development, or something that has been sorted out, or simply good progress.

  – a negative development, or something that needs to be sorted out that may cause problems, or an item where work seems to have stopped — no criticism of people involved is (necessarily) implied.

  ◆ more work or a decision is needed.

  ! a controversial point that must be discussed further.

- No names mentioned since it's very difficult to be fair to everyone who has done all the work — people will know who they are!

Calorimeter signals and cables

+ Nice thorough job done on compiling signals from calorimeters — a few questions but mostly they seem o.k.

– Who builds receivers (TileCal and even LAr) still not defined, but we will know about LAr (and maybe even TileCal) soon
– TileCal cable situation messy

– Rack layout situation still not entirely clear (use of middle hole, position of CTP, wall); must also consider front-of-rack cabling

◆ Must document in detail connections from calorimeters to Preprocessor
◆ This includes checking/specifying of all receiver interconect boards

Preprocessor

+ Steady progress on ASIC, almost ready to send it out
+ None of the problems found affect real-time data path
+ Can now use high-speed LVDS dies on MCM
+ First MCMs built (except for ASICs)
+ Good planning for tests
+ PPM making good progress, including AnIn
+ Test plans made for quickly evaluating ASIC and MCM
+ Readout and ROD progressing
+ New and better estimates of rates and compression

– But we said that at the last meeting!

– But looks as if ROD needs two S-links to read out even 1 BCID + 3 raw data slices, and can't do 1 + 5 at full speed

◆ Much documentation still needs updating (also said at last meeting)
◆ Think about the synchronisation requirements and implementation for analogue inputs from video memories

CPM and JEM

+ CP FPGA tests progressing well
+ CPM being laid out

– CPM timetable slipped, on critical path

+ Work on JEM firmware has resumed
+ New work on jet algorithm firmware

– Long sad saga of first JEM prototype
– Still production problems to get another one made
– How to proceed to a completely full-specification prototype still not clear
– Might only test full-spec module in phase 2 of slice tests

◆ JEM documentation still needs updating (also said at last meeting)
◆ Pick up on PCB design points for easier reworking
◆ Online software work needed

Common modules and backplane

+ CMM nearly ready to send out for manufacture
+ TCM and adapter link card progressing well

– CMM, CPM, TCM somehow used wrong front panel specification!

◆ CMM will give us important information on the feasibility of 9U boards with fine-pitch BGAs
◆ Decide how many TCMs to assemble; use current layout

+ Backplane almost ready to go, various small problems solved and manufacturer has helped a lot
+ Further progress on debugging CP/JEP ROD prototype
+ Route cards and problem reports introduced to document individual faults and general problems

– Backplane timetable slipped, on critical path

◆ Backplane documentation should be finalised

DCS

+ **Progress on Fujitsu local DCS solution for modules**

– **Fujitsu support is poor, probably not the best choice for 'cut-down' solution**

◆ **Should finish getting demonstrator system working and reading out real voltages and temperatures on TCM**

◆ **Better choices for on-board chips seem to exist, and others may be coming**

! **Possibly use ELMB on TCM as bridge between crate CANbus and outside world**

! **May have to add a second CANbus interface to ELMB (e.g. via SPI)**

! **Could still decide in final system not to monitor each module**

Physics simulation

+ **Work progressing on trigger simulation**
+ **Now working with CTP on trigger menus**
+ **Birmingham funded to build big new PC cluster for simulation**

– **ATHENA installation and documentation situation (especially for people not at CERN) is appalling**

◆ **Need to finish jet and E_T algorithms**
◆ **Need to add features such as thresholds varying with location**

Online software

+ Much progress in defining packages and saying who is responsible for developing them
+ Progress on run control, databases, simulation, modules, ...
+ Balanced view of the future role of HDMC emerging

– Want a standard, well-described distribution of software for ROS!
– Want ROS/ROBIN configuration to stabilise and stop changing every time we ask about it!

– Still have shortage of effort to develop software and firmware, and to test modules — but new people at Mainz and Heidelberg

◆ Large number of documents to finish (e.g. requirements), so decide which ones really need full review procedure and concentrate on them
◆ Debugging complex firmware will not be easy!
◆ Remove 'barrier' between firmware engineer and test-vector authors

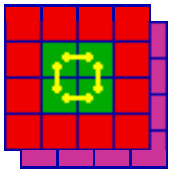
! Try to get non-software experts to do as much module testing as possible (said this last time)

Slice test and timescales

+ We have made a lot of progress, and modules are now about to be manufactured

– Commissioning/testing phase will be complex and it is very difficult to predict duration (yes, we said that last time)
– DIG must tell us whether we should use ROS or ROD-crate DAQ, and on what timescale
– Slice test now end June at earliest
– We are not good at estimating timescales, and module commissioning time is very hard to predict

◆ Must not send modules for slice test until they are working well on their own *and* in their own subsystem
◆ Need user guides as well as up-to-date specifications for all modules
◆ Should write test plans as early as possible



Summary

+ There has been a great deal of progress!
+ Try to use regular, short telephone conferences to keep groups informed about status
+ Think a bit about possible showstoppers and how we might react to them

– ... But also slips in timescale, shortage of effort

◆ Do not neglect documentation; we already have problems of lack of continuity as people leave and are replaced

! Power-cut note: slides are less necessary than we think, and do not stop the 'show'!

Thank you to the RAL group for a productive, well-organised meeting in pleasant surroundings!

Special thanks to Norman for dealing with the accommodation nightmare!