CMM hardware and firmware status

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- Current CMM
- Next generation of CMM
- Firmware: CP, Jet, JEM



Current CMM

Tested:

- Real-time data path
- Readout \rightarrow ROD
- FPGA configuration from FLASH
- TTCrx, rad- & non rad-hard versions
- I2C interface to TTCrx
- CAN
- No outstanding tests





CMM tests: Real Time Path



- CMM versions tested: CP-System & CP-Crate
- Tested complete functional path through module
- Tested all IO channels to/from RTM, CPM & CTP (not concurrently)
- Used test patterns designed to expose functional & timing errors
- Used dedicated test firmware to provide extra data sources where necessary



CMM : Readout Tests

- Test Data loaded into CMM RAMs in Crate & System FPGAs
- Signal Generator supplied L1As on demand
- Readout data transmitted to
 - DSS G-Link
 - CMM-CP ROD
- single & 3-slice data packets
- single & multiple L1As
- DSS:
 - slight oddity: final data word always appears in RAM twice.
 (DSS problem also see by CPM)
- ROD:
 - data received successfully with correct format.



Next Generation of CMM

- Motivation for updating design: error in CPLD JTAG chain schematic prevents *auto*-config. of Crate FPGA.
- Few components added, upgraded
- Largest changes to layout are addition of
 - strengthening bars
 - ESD strip
- Updated schematics are in DO for board layout
- Placement finished
- First pass at auto-routing went well
- 5 PCBs to be manufactured, 2 assembled initially
- Schedule:
 - boards out to manufacture in March
 - commissioning during April
 - available for sub-system tests in May



CMM Firmware

- CPM hit counting:
 - Firmware complete
 - No known problems
- Jet hit counting:
 - To be done by Sam Silverstein
 - based on CPM hit code
 - Ian to send CPM hit Code to Sam
- Jet Energy Summing:
 - Real-time path designed by Andrea Dahlhoff
 - Andrea has sent code to lan, who is adding Readout logic modified from CPM hit firmware



Summary

- Current CMM is available for sub-system tests.
 - Needs some ID support for FPGA loading.
- CP-Merging firmware is ready
- Jet hit & Energy Merging firmware is in development
- Next generation of CMMs should be available for sub-system tests in May '03.

