

Project Monitor Form

Project: CMS FED Date: Wed 25 Jan-2006	PMF number: 59 Sheet: 1 of 2
---	---

Project Implementation phase.

FED Production

Board Deliveries to CMS: Remains on schedule.
 4th batch of 64 arrived at CERN last week bringing total to 174 boards.
 Next batch of ~ 64 for CERN ready soon.
 New arrangement for air freight delivery used for last 2 batches worked well.

CMS Tracker FED Final Production Cumulative Delivery Schedule
(NB does not include Pre-Series or Prototype FED deliveries)

	Apr	May	Jun	Jul	Aug 2005	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun 2006	Jul	Aug	Sep	Oct	Nov
Planned at CERN					0	0	25	50	100	150	200	250	300	350	400	450	475	500	500	500
Actual at CERN					0	0	40	75	110	174	174	174	174	174	174	174	174	174	174	174

Production:
 Assembly plant test setups working well. Only minor problems quickly resolved....
 Linux (Konqueror) browser used to display test results files broke (not understood). This didn't stop testing. Later moved them to alternative browser.
 Loop back card came loose which caused constant Bscan errors.
 Occasionally visits to help out with a few boards failing tests there.
 Need to back up Test Results again soon.

ORx
 Final batch of 705 ORx were sent from Imperial to eXception 11 Jan.
 Still waiting for stock numbers from eXception. We estimate they have enough for ~ 467 boards.

How to complete production...
 Identify any spare stock. 32 at RAL.
 Further 120 on order from CERN.
 Recover from prototype FEDv1 (~16 boards, incl. 6 duff boards). Return (unused) FEDv1 from CERN.

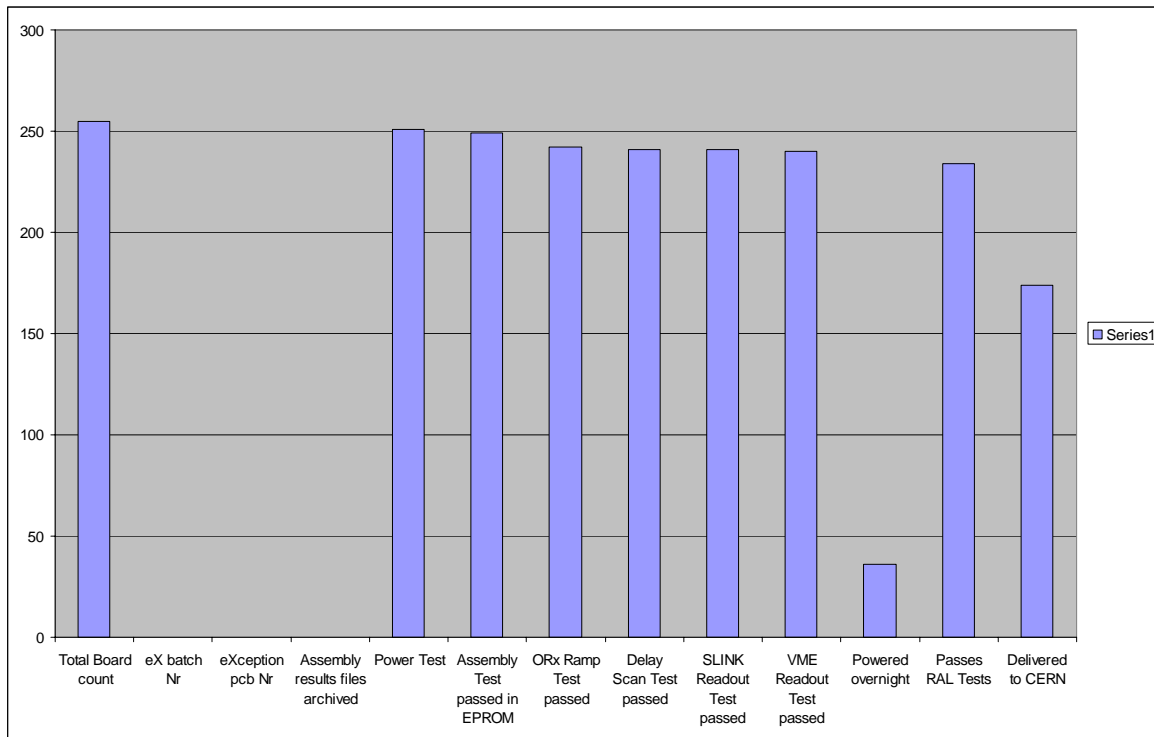
End of year Production review was held at eXception in December.
 Reviewed procurement, manufacture, test. No major problems. Keeping to ~ 50 boards per month.
 They are experiencing some contractual difficulties with new Xilinx distributor. But this will not affect our production schedule.

SLINK Transition Card production is still on hold until tested with FMM. Order needs to be placed within next 2 months to allow for sufficient testing time.

Testing at RAL:

Catching up with board deliveries from eXception over New Year.

Board quality arriving at RAL still good.
250 boards have now being tested at RAL.



More details are in Production [spreadsheet](#).

Found a temporary fix for odd word swapping effect reported in VME readout on a handful of (BE FPGA firmware update). This allowed Assembly Test to be completed (successfully) on these boards.

CERN Integration :

Tests with final TTC cards (TTCi) in progress.

FMM card throttle test needed before remaining 400 Transition Card production. Probably done at Cessy.

Debugging full rack (3 crate) system in progress. Need to plan for RAL assistance.

Water cooling has failed at 904 (more than once). Fortunately firmware triggered overtemp shutdown of FEDs was introduced for full crate testing!

ADCs should now be disabled outside data acquisition runs.

First production boards have gone to B186 for Tracker Integration.

Firmware :

Some final checking needed on VHDL (Fake Frame) before standard FE FPGA release (see Oz slide). Simple mod was made to allow fake frames to run at full luminosity trigger rates (i.e. back to back frames).

VME BLT readout now stable with CAEN (as of VME 21000327). At limit now (~ 12 MB/sec for 32KB transfer size) without a significant redesign.

BE FPGA fix for word swapping effect (only affected few boards). Need to try with DCM reset code from GCT. Possibly a problem with some DCMs in some FPGAs? Don't want to risk rework to prove this yet.

Request for additional DAQ info word in header (Rob)?

Add a test register for generating Throttle signals (expected needed for FED-FMM validation).

SPY channel capture of Frames. Delay FPGA part to complete (not urgent).

Software:

TTC integration (see above).

Optimising FED parameter loading.

Low level Software status (report by Jo).

fedDebug code put in cvs repository.

Other Items:

Placed order for final 22 LHC crates. Same spec as before. Next delivery due around June, assume would have in hand by September.

Electronics Test lab at RAL is being taken over by Space Science. FED test area will remain until end of 2006.

All TTCoc Front panels now sent to Jan. Jan will takeover design files if further needed.

The Compact Flash cards we use have been rebranded.
eXception are being nominated for CMS Industry award.