CMS ROC Report

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Actors and stakeholders

- CMS shift coordinator (SC)
- CMS monitoring coordinator (MC)
- CMS communications coordinator (CC)
- CMS shift operator (SO)
- CMS monitoring coordinator at FNAL (MCF)
- CMS communications coordinator at FNAL (CCF)
- CMS Technical Coordinator(s)
- CMS Management
- FNAL Management
- University Researchers/Faculty
- CERN computer security
- FNAL computer security
- FNAL security

- CMS subdetector integration coordinator
- CMS sub detector commissioning coordinator
- CMS pixel expert
- CMS tracker expert
- CMS preshower expert
- CMS ECAL expert
- CMS HCAL expert
- CMS muon expert
- CMS trigger expert
- CMS DAQ expert
- CMS DCS expert
- CMS software expert

Is location of a detector expert important?

HCAL Scenarios

Compliments of Shuichi Kunori

HCAL schedule

- 2005 07-09 Calibration runs, HE, HB, HO in SX5
- 2005 06-11 HF burn-in, calibration runs.
- 2005 12   close detector in SX5 for the magnet test.
- 2006 01-02 magnet test/slice test/cosmic challenge
- 2006 03-04 lowering HCAL and others from SX5 to UX5.
- 2006 04-07 Calibration runs/burn-in HE, HB, HO in UX5
- 2006 05-10 Test Beam with ECAL
- 2007   Pilot run

Location of HCAL experts

- **HCAL Frontend electronics: FNAL**
- **HCAL Readout/Trigger module: Maryland**
- **HCAL synchronization: Maryland**
- **HCAL Readout system: Boston U.**
- **HCAL slow control: Florida International**
- **HCAL Local DAQ: Maryland/Princeton**
- **HCAL Laser/LED: Florida International/Florida U.**
- **HCAL radio active source system: Purdue**
- **HCAL QIE: Minnesota**
- **HCAL Optical Decoder Box: Norte Dame**
- **HF   PMT: Iowa/Texas Tech**
- **HF   system: Texas Tech**
- **HCAL data analysis and calibration: FNAL/North Western**
- People from above institutions were regular participants of daily meetings during the HCAL testbeam in 2004.

HCAL: calibration run in 2005.

Goal: Taking calibration data from HE/HB/HO in SX5 and produce calibration constants at Fermilab and insert the constants into the CMS Conditions DB.

Period: 2005 07-10

Actors:
- HCAL Calibration run coordinator
- HCAL Calib data taker in SX5
- HCAL Calib data analyzer at Fermilab

Required information and tools:
- web camera(s) in SX5 to view the detector or electronics
- e-logbook
- viewing state of detector and DAQ through a web interface.
- VRVS/ESNET for daily meeting
- desktop exchange for presentations.

Scenario:

- **time difference**
  FNAL 9:00-17:00   CERN 16:00-24:00
     17:00-01:00   24:00-08:00
     1:00-09:00   08:00-16:00

- **SX5 HCAL calibration shift**
  8:00-15:00 (CERN) operate the HCAL calibration system and take data in SX5
  two shifters/crew

- **Daily meeting (ROC-SX5-Universities)**
  09:00-10:00 (FNAL)

- **ROC HCAL calibration shift**
  08:00-09:00 (FNAL) quick check of run condition
  10:00-14:00 (FNAL) analysis and production of calibration constants
  one shifter

HCAL Shifts for slice test (early 2006) (Cosmic Challenge)

Period: 2006 02-03.

Goal: take cosmic data and monitor stability of HCAL, i.e. look for correlation between muon track and energy in HCAL.

monitor data quality.

Actors:

- CMS slice test operation shifter at P5.
- HCAL shifter at CERN and FNAL
- Shifters from other detectors.

Scenario:

HCAL shift schedule

FNAL time	CERN time
09:00-17:00	16:00-24:00
7:00-01:00	00:00-08:00
01:00-09:00	08:00-16:00

CERN daily meeting at 9:00-10:00 (FNAL time)

Tracker Schedule

Testing and pre commissioning
- Testing TOB during integration at CERN
  - 1 rod, 8 rods(control ring), 16 rods (cooling ring)
- Tracker System test ("1/4 tracker test") - shifts
- Cosmic challenge - possible participation - shifts

Tracker installation (Feb-April 2007)

Commissioning in CMS Hall

Building 904 (electronics)
- Long term installation with some rods;
- may want remote control of test stands

SCIDET
- Test stands

Pixels - no info yet

Tracker Needs

- Main goal is monitoring
  - Test of Outer Barrel (TOB) modules and rods during integration
    - Mainly one on one communication
  - Test of Tracker Segments during system tests and perhaps the cosmic challenge (could involve shifts)
  - Full tracker monitoring once integration is complete.
  - Expect a expert and CERN working with and expert at Fermilab.   At the moment, we can assume that controls are at CERN.
- Communications
  - Audio important - have used phone cards at CERN ($0.10/min)
  - Web cameras (both sides?)
  - Monitor system with web based tools
  - Data goes to CASTOR - analysis somewhere

Scenario ID	130
Author	Kaori Maeshima, Erik Gottschalk
Date	22-May-2005
Goal	Run a ‚normalÓ data-monitoring shift at FNAL
Level	High
Actors	CMS shift coordinator (SC), CMS monitoring coordinator (MC), CMS FNAL monitoring coordinator (FMC)
Trigger	A decision by the SC to delegate responsibility for data monitoring to FNAL.
Narrative	1) The CMS shift coordinator (SC) in the CMS control room, assigns the data-monitoring token to the CMS FNAL monitoring coordinator (FMC) at the beginning of a new shift. This includes responsibility for an assessment of the quality of the data recorded during the shift. 2) The FMC acknowledges responsibility for CMS data monitoring. 3) The FMC takes control of the FNAL display system. 4) The FMC reviews the ‚standardÓ monitoring plots for data recorded since the start of the current run period. 5) The FMC reviews ELog entries from the previous shift. 6) The FMC communicates with the MC from the previous shift to discuss any abnormal occurrences during the shift. When the communication has been concluded the MC from the previous shift is relieved of shift responsibilities. 7) The FMC communicates with the SC throughout the shift to assess detector status and data quality. 8) When a run period has been completed, the FMC and SC assess the quality of the data recorded during that period of running. 9) When the shift ends, the SC assigns the data-monitoring token to a new MC for the next shift. 10) The FMC communicates with the new MC until it has been decided that all issues from the shift have been addressed and suitably documented in the shift summary.
Exceptions	
Comments	

Action Items

- Need more info
    - Meet with muon/pixel group to add scenarios
    - Contact some university people
    - Contact CMS management (here and at CERN) for additional scenarios.
- Work towards some conclusions
    - Refine scenarios - extend beyond 2006
    - Review scenarios
    - Turn scenarios into requirements