CMS

Compact Muon Solenoid

CCRC08 - Phase 1

Draft Plan v0.01

Matthias Kasemann

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CCRC'08 Schedule

- **Phase 1 - February 2008:**
  - **blocks of functional tests**
    - Demonstrate progress
    - Try to reach 2008 scale for tests

- **Phase 2 - May 2008:**
  - **Full workflows at all centers executed simultaneously by all 4 LHC experiments**
    - Use data from cosmics data run,
    - add artificial load to reach 100%
  - **Duration of challenge: 1 week setup, 4 weeks challenge**

1) Detector Installation, Commissioning & Operation	**2) Preparation of Software, Computing & Physics Analysis**

V36 Schedule (Nov'07)

Month	Installation	Software/Analysis
Aug		
Sep		S/w Release 1_6 (CSA07)
Oct		CSA07
Nov	Cooldown of Magnet: Test	S/w Release 1_7 (CCR_0T, HLT Validation)
Dec	Tracker Insertion CMS Cosmic Run CCR_0T Several short periods Dec-Mar)	2007 Physics Analyses First Results Out
Jan	Last Heavy Element Lowered	S/w Release 1_8 (Lessons of '07)
Feb	Test Magnet at low current	**Functional Tests CSA08 (CCRC)**
Mar		S/w Release 2_0
Apr	**Beam-pipe Closed and Baked-out** 1 EE endcap Installed, Pixels installed **Cosmic Run CCR_4T**	(CCR_4T, Production startup MC samples) **MC Production for Startup**
May	**Master Contingency**	**CSA08 (CCRC)** **Combined Computing Readiness Challenge**

2nd ECAL Endcap Ready for Installation end Jun'08

CCRC'08 Phase 1: February 2008

Proposed Goals for CMS:

Verify (not simultaneously) solutions to CSA07 issues and lessons

- don't repeat CSA07 where solution is not ready

Attempt to reach '08 scale on individual tests

- don't repeat CSA07 where no increase in scale possible

Guiding principles:

- **Computing&Software challenge, no physics delivery attached to CCRC'08/1 tests**
- **Cosmics run and MC production have priority if possible**
- **Define blocks of tests, which stress a specific service or workflow**
- **Tests should be as independent from each other as possible**
- **Tests should be done in parallel where possible**
- **Individual test successful if sustained for (3-5) days**
- **Where full '08 scale is not possible (hardware) scale down to hardware limit**

Proposed blocks of tests

1. **Data recording at CERN**
   - **Scope:** readout from P5, HLT, w. stream definition, incl. Storage Manager, transfer to T0, perform repacking, write to CASTOR
   - **Performance goal:** 250Hz
   - **Resources required:** CPU, T0 disk, Tape bandwidth, Tape storage

2. **Processing at T0:**
   - **Scope:** from CASTOR, use CMSSW.x.x, write N out-streams to CASTOR
   - **Performance goal:** 250Hz
   - **Resources required:** CPU, T0 disk, Tape bandwidth, Tape storage

3. **CERN data export to T1:**
   - **Scope:** export to all T1's to MSS
   - **Performance goal:** 600MB/s aggregate
   - **Resources required:** T0 and disk, network, Tape bandwidth and storage at T0 and T1

4. **T1 data handling and processing:**
   - **Scope:** processing and skimming from tape
   - **Performance goal:** full '08 scale (or hw limit)
   - **Resources required:** tape bandwidth, disk, CPU

Proposed blocks of tests

5.1 T1 data export:
- **Scope:** Test T1 export to all seven CMS T1
- **Performance goal:** full '08 scale
- **Resources required:** commissioned links, tape bandwidth, disk, network

5.2 T1 data export:
- **Scope:** Test T1 export to T2
- **Performance goal:** full '08 scale, to > 3 T2 at 20 MB/s
- **Resources required:** commissioned links, disk, network

5.3 T1 data import:
- **Scope:** Test T1 import from T2 to tape
- **Performance goal:** full '08 scale, from > 3 T2
- **Resources required:** commissioned links, tape bandwidth, disk, network

T1 import export tests (5.1-3) should be done individually and then together

6 T2 MC production and Analysis:
- **Scope:** Test MC production and Analysis
- **Performance goal:** tbd
- **Resources required:** CPU, disk

Status of preparation, next steps

- **The CCRC08/1 tests are preliminary and have not been discussed widely in CMS**

- **Next week is CMS week, we will:**

    - **Review performance goals**
    - **Review and adjust scope**
    - **Identify coordinator for each test**