



# CMS

Compact Muon Solenoid

Proposal: CCRC'08

Common VO Computing Readiness Challenge 08

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# Motivation and Goals

What if:

- LHC is operating and experiments take data?
- All experiments want to use the computing infrastructure simultaneously?
- The data rates and volumes to be handled at the Tier0, the Tier1 and Tier2 centers are the sum of ALICE, ATLAS, CMS and LHCb as specified in the experiments computing model
- Each experiment has done data challenges, computing challenges, tests, dress rehearsals, .... at a schedule defined by the experiment
- This will stop: we will no longer be the master of our schedule...  
.... Once LHC starts to operate.
- We need to prepare for this ... together .....

A combined challenge by all Experiments should be used to demonstrate the readiness of the WLCG Computing infrastructure before start of data taking at a scale comparable to the data taking in 2008.

This should be done well in advance of the start of data taking on order to identify flaws, bottlenecks and allow to fix those.

We must do this challenge as WLCG collaboration: Centers and Experiments



# Proposed Scope (CMS)

- Test data transfers at 2008 scale:
  - Experiment site to CERN mass storage
  - CERN to Tier1 centers
  - Tier1 to Tier1 centers
  - Tier1 to Tier2 centers
  - Tier2 to Tier2 centers
- Test Storage to Storage transfers at 2008 scale:
  - Required functionality
  - Required performance
- Test data access at Tier0, Tier1 at 2008 scale:
  - CPU loads should be simulated in case this impacts data distribution and access
- Tests should be run concurrently
- CMS proposes to use artificial data
  - Can be deleted after the Challenge



# Constraints & Preconditions

- Mass storage systems are prepared
  - SRM2.2 deployed at all participating sites
  - CASTOR, dCache and other data management systems installed with appropriate version
- Data transfers are commissioned for CMS
  - Only commissioned links can be used
- Participating centers have 2008 capacity



# Proposed Schedule

- Duration of challenge: 4 weeks
- Based on the current CMS schedule:
  - Window of opportunity during February 2008
    - In March a full detector COSMICS Run is scheduled
      - With all components and magnetic field  
This is the the first time with the final detector geometry
- Document performance and lessons learned within 4 weeks.



# CCRC'08 Proposed Organization

Coordination: (1+4+nT1)

- WLCG overall coordination (1)
  - Maintains overall schedule
  - Coordinate the definition of goals and metrics
  - Coordinates regular preparation meetings
  - During the CCRC'08 coordinates operations meetings with experiments and sites
  - Coordinates the overall success evaluation
  
- Each Experiment: (4)
  - Coordinates the definition of the experiments goals and metrics
  - Coordinates experiments preparations
    - Applications for load driving  
(Certified and tested before the challenge)
  - During the CCRC'08 coordinates the experiments operations
  - Coordinates the experiments success evaluation
  
- Each Tier1 (nT1)
  - Coordinates the Tier1 preparation and the participation
  - Ensures the readiness of the center at the defined schedule
  - Contributes to summary document