US CMS Run Plan Workshop – 2008
Thursday-Friday, May 15-16, 2008
Bulletin # 2

A draft agenda is located at:
http://indico.cern.ch/conferenceDisplay.py?confId=30825

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CMS has been conducting a variety of meetings to prepare for the collection, processing and analysis of the data from the first LHC collisions that are expected in 2008. These include meetings during Physics Weeks and meetings of the Commissioning and Run Coordination group. While many US CMS members have attended these in person and many more by remote links, there are many members who have not been able to follow the discussions, provide input, and understand how best to connect themselves to work that needs to be done. The purpose of this workshop is

- **to inform the US community about the plans that are in place;**
- **to provide an opportunity for our experienced physicists to make input to the planning process;**
- **to ensure we have a plan, with specific individuals identified, to cover all responsibilities for detectors that the US built or is heavily involved in and to cover any other commitments we have made, for example in the area of data operations;**
- **to undertake new commitments, within our available resources, in additional areas where CMS has identified holes.**

Because the number of topics is large, the workshop will be organized by Working Groups, each with a charge, as follows:

Working Group 1: Commissioning

This Group is charged to discuss and provide input to CMS's plan to achieve robust physics objects as rapidly as possible. The group should consider the plan to commission the tracking system, calorimeters and muon systems to the point where they can carry out the physics that is available from the dataset of the 2008 run. This includes

1. **calibration,**
2. **alignment,**

3. **reconstruction,**
4. **extraction of physics objects, and**
5. **validation by using SM model objects and processes.**

US CMS collaborators should make commitments to carry out specific tasks, beginning with detectors that the US has built or has major involvement in. They should also identify the datasets required to accomplish those tasks, the triggers under which they should be taken, and which ones should be made available at the US Tier1 and Tier2. Subgroups and possible signals to investigate are:

1. **Tracking: including pixels and silicon strips. Signals to study are MB and UE (requested by CMS already), b tagging, tau triggers and top physics**
2. **Electromagnetic Calorimetry: Possible signals to study are e/ψ -Υ –W-Z/γ/ γ - γ + J**
3. **Hadron Calorimetry: areas of study are jets, dijets and missing Et in multijet events.**
4. **Muon Detection: ME/μ/ halo, b pairs, ψ -Υ –W-Z**

An important element of this work is to analyze data already available from test beam runs, Global runs and Cosmic Runs to learn as much about the detectors as possible before collisions begin. Commitments may be needed to complete this work.

Working Group 2: Detector Operations

This group is charged to discuss and provide input to CMS plans and tools for shift operations including data quality monitoring, problem detection and resolution, training and documentation. It should consider broadly CMS plans' to insure that it is taking quality data and the division of effort between local (P5) and remote (CMS Centre at Meyrin, FNAL ROC) control rooms and communications paths. It should identify any missing functionality in tools, especially DQM tools, and any missing procedures or documentation. It should consider whether any special triggers are required for DQM monitoring. It should provide input to CMS, determine what work US collaborators will commit to carry out, and what data flows that implies to the US CMS ROC and to T1/T2. The goal of this effort is to validate that the data that is taken is good data that can be analyzed.

Commitments, with specific names attached, should be made to ensure good data is collected for all detectors the US built or has a significant involvement in. Commitments of effort should also be made to areas in which the US has a specific interest, such as Remote Operations. If additional effort is available, commitments should be made to fill holes that CMS has identified in its coverage of this area.

Working Group 3: Data and Physics Operations

This group is charged to discuss and provide input to CMS's plans for the areas of data and physics operations, including data processing at the Tier-0 and Tier-1 centers, triggers, data streams and data sets, data hosting and access at Tier-2s and LPC-CAF, data tiers (AOD, RECO, RAW), and the tools for data processing and data analysis. It should consider broadly CMS' plans for processing and reprocessing of data (including sufficient access and distribution of raw data) and for making it available for physics analysis. It should identify any missing functionality in tools in the areas of data management/discovery/monitoring, data analysis, physics analysis environment. It should inspect procedures and documentation and provide input to CMS, determine what work US collaborators will commit to carry out, and what data flows that implies to the US Tier-2s and LPC-CAF. The group should also examine the Physics Analysis Tools and make commitments to contribute to the development of the toolkit. The goal of this effort is to validate that the data is being processed with high quality and is accessible timely for analysis.

All Groups are charged to examine what is needed for CMS to accomplish its goals, who is committed in US CMS to carry out specific tasks, and where are the remaining holes where recruiting is needed. Note that the focus must be on needs/goals for the first data taken in 2008. There are tasks that can be undertaken at a later time which must be given lower priority.

Each Group is expected to follow this general plan

1. **An introduction by a CMS leader or a US CMS participant in the corresponding CMS-wide activity**
2. **A presentation of US CMS collaborators' ideas, issues and concerns (scheduled talks)**
3. **Discussions**
4. **Work in subgroups to discuss tasks to be done and develop commitments to projects, starting first with detectors and projects with strong US responsibility and involvement and then considering uncovered areas and holes in CMS**
5. **At the end of the meeting, each group or subgroup should provide a list of issues and action items to be discussed with CMS and a list of commitments, with names, that people are willing to undertake with a eye towards US responsibilities and CMS-wide needs.**

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