

**US CMS Software and Computing Oversight Panel Review
October 24-25, 2002
at Fermilab**

Charge to the Committee:

General Charge

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The Oversight Panel should provide advice to the US CMS Project Manager for Software and Computing. The reports will be transmitted to the Fermilab Associate Director in his oversight role, and the Chair of this Panel will be invited periodically to meetings of the Fermilab Physics Advisory Committee to present the status and plans for the project.

This Panel is asked to review the joint effort by US CMS, CMS, and the other LHC experiments to provide a suitable set of tools for physics research.

A large contribution to the computing software, hardware and physics analysis tools by the US collaborators is essential for the success of the CMS experiment. A high level of participation by the US collaborators is also necessary in order to meet our own goals for physics results when the experiment starts to operate. The efforts in the US must be integrated seamlessly into CMS as a whole. IT IS ESSENTIAL TO TAKE INTO ACCOUNT THE COLLABORATION, NOT ONLY WITH THE WHOLE OF CMS BUT ALSO WITH THE COMMON ELEMENTS OF THE LHC COMPUTING ENVIRONMENT.

The tasks in the US CMS Software and Computing Project are structured under two categories, each with a leader reporting to the Project Manager for Software and Computing.

1. Core Application Software: Core software and detector simulation at the subsystem level and reconstruction software.
2. User Facility: Regional Center (Tier 1); Remote Analysis Centers (Tier 2 and 3) and networking.

The Panel should consider and comment on this structure and the extent to which it is responsive to the goals of the project. In addition, comments on the more detailed aspects of the management are desired:

- o Technical scope, capabilities and progress
- o Costs
- o Provisions for contingency
- o Resource loaded schedules

Is the scope well defined?

Are the goals well defined?

Is there an adequate Management Plan?

Is Management performing appropriately?

Specific Focus for Oct. 2002 Review

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There are two major components of this Review.

A) Performance and Compute Capability Deliverables within Current Scope

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We would like the review committee to specifically address:

- o the technical progress and managerial performance of the project and give feedback to project management and Fermilab management.
- o issues pertaining to the new "bare bones" project plan.

The project has received reduced funding guidance, with largely impacts the next two fiscal years compared to the project plans as base lined in the DOE/NSF review a year ago. Therefore the project has developed a "bare bones" project plan, reduced and restructured from what the SCOP review has looked at in its last meeting Oct. 2001.

B) Scope Revision

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The emphasis of the project even in its full version, has been oriented towards the delivery of a relatively narrow set of functions and capabilities directly associated with the Tier 1 and Tier 2 centers. Contribution of CAS to CMS-wide

software deliverables is based on a "level of effort". There is little recognition in the project definition of that which is outside the scope of its direct funding. This

includes the contributions of non-project physicists and computing professionals and the broader CMS, LHC, Grid-based-science, context.

With the advent of

- the LCG at CERN, and
- the growing impact of Grid initiatives, which are opening new opportunities for funding part of what is needed to put in place the LHC research environment in the U.S. and elsewhere,

this paradigm may need serious revision.

We have begun to consider the possibility of recasting the project. This could accommodate a broader scope definition and a broader potential for funding. Concrete examples of the latter are the submissions of ITR proposals to the NSF and CERN proposals to the European Union. At the same time the project must retain a progressive and aggressive program for delivery of capability to fully participate in the multiple stages of production and data challenges in preparation for eventual data analysis.

Based on the relevant presentations we would like the committee to comment on:

- o whether such a recasting of the project is desirable?
- o whether there are major conflicts between the ability to deliver intermediate capability and the adoption of a more global project definition.
- o the potential for success on the broader physics and functionality front offered by the possible new approach.