

Charge for Jan 2002 US LHC Computing Review

An independent peer review of the US LHC Software and Computing (S&C) projects will be conducted at LBNL on Jan 13-17, 2003. This review will continue systematic oversight of the US LHC research program.

The scope of this review is to include both the individual US ATLAS and CMS S&C Projects and the common projects which provide software resources to both experiments. The goal of this review is to assess the current understanding of the scope, cost and schedule for the US LHC S&C projects and the operation of their management structures. Both US ATLAS and US CMS should present self-consistent project plans targeted to the funding guidance received from DOE and NSF, and separately address how incremental funds could be used (as well as discussing contingency planning that could deal with possibly reduced funding). It is clear that, due to the dynamic nature of the software and computing fields, that plans for the next 2 years will be much more concrete than longer term plans, but enough information should be presented to allow the reviewers to judge the adequacy of proposed long term resources.

This year's review should concentrate on issues arising from major changes during the past year that have caused changes to the initial baseline adopted at the November 2001 review. In particular, the reviewers should examine how the US Software and Computing projects have reacted to changes in the LHC schedule, the advent of the LCG project, and funding guidelines from the agencies. In addition, they should look at how external efforts, particularly from grid R&D projects, are integrated into the Software and Computing projects, with an eye towards determining if project managers have sufficient control over resource allocation and priorities.

Furthermore, since the projects have been operating for roughly one year since initial baselining, it is appropriate to review achievements of the past year and to monitor the level of technical progress.

The charge for this review is to assess:

- The overall scope of the US LHC S&C efforts and their connections to both the international LHC S&C efforts and the CERN LCG project;
- The risk to US LHC S&C schedule or scope given current funding profiles and overall LHC project schedule, and additional risks from reduced possible funding;
- The function, scope and structure of the national ("Tier 1") US LHC computing facilities, their relationship to smaller regional and university facilities, and how existing computing centers are being leveraged to provide resources for LHC computing;
- The contributions of the US S&C projects in providing and supporting core and detector specific software components to the international efforts, and the level of leadership from US collaborators;
- The level of integration of computing infrastructure efforts (such as networking and grid computing) into the planning and execution of US LHC S&C projects, particularly the level of control project managers are able to exert;

- The plans of the US collaborations to provide computing resources to their users and their success in integrating US physicists into the software development process;
- US contributions to recent and forthcoming data challenges, both in providing computing facilities and in developing software and managing these challenges;
- Existing and potential common projects which could benefit both ATLAS and CMS; and
- Project Management Plans, organizational structures, adequacy of personnel, contingency planning, and flexibility of each of the US LHC S&C projects.