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PRINCIPAL LHCC DELIBERATIONS

9TH MEETING OF THE COMPUTING RESOURCES REVIEW BOARD

25 APRIL 2006

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This document summarises the principal LHCC deliberations concerning the LHC Computing Grid (LCG) Project at the Committee's sessions in October and November 2005 and February and March 2006.

CONCERNS FROM THE PREVIOUS COMPUTING RESOURCES REVIEW BOARD

SUB-SYSTEM	CONCERN	STATUS
Applications Area	Imminent reduction of manpower due to the transition from the development to the deployment, maintenance and support phases.	Measures have been taken to stabilize the decreasing level of manpower effort in the Applications Area.
Middleware Projects	Migration to gLite while the sites are still maintaining a production service.	Positive steps have been taken towards the Worldwide LCG (WLCG), organizing services for the LHC on all three of the Grid infrastructures, including gLite. Good progress was also reported on the Grid interoperability but the effort needs to be strengthened and exercised on a larger scale.

LHCC COMPREHENSIVE REVIEW

The third annual LHCC Comprehensive Review of the LCG Project took place on 14-15 November 2005. The LHCC referees addressed the following areas: Overview and Global Collaboration, Applications Area, Fabric Area, Grid Deployment Area, Service Challenges, and the issues of Management and Resources. The LHCC acknowledges the considerable amount of work that has gone into the preparation of the LCG Project Comprehensive Review.

The LHCC considers that the LCG Project has shown significant progress since the last Comprehensive Review. In particular, the Service Challenges have been successful, albeit with a lower-than-expected through-put, the Grid middleware quality and stability and the interoperability between the various middleware systems on a small scale have improved, the Baseline Services have been defined and more focus has been put on practical aims matched to the requirements of the experiments. The associated LCG Technical Design Report was submitted in June 2005 and

reviewed by the LHCC in October 2005 and the Computing Memorandum of Understanding was approved by the corresponding Resource Review Board in October 2005.

However, the Committee did note certain concerns. The connection between the middleware and the experiments is considered to be too weak, with the risk that the former will not satisfy the requirements of the experiments. Moreover, significant delays were reported in the deployment of the Enabling Grids for E-SciencE (EGEE) gLite services, and in the CASTOR2 disk pool management system. The interoperability and the provision of a common interface of the various types of middleware being produced should continue to be pursued at a larger scale. The analysis models are to a large extent untested and the database service deployment is late. Further input from the experiments is required to advance on the latter two issues.

The conclusions and concerns of the LHCC are given below. They will help the Committee to follow up outstanding issues and to monitor future progress of this project in forthcoming sessions of the LHCC prior to the next LCG Project Comprehensive Review one year hence.

- Good progress was reported on moving towards the Worldwide LCG, with the interoperability of various Grid middleware improving markedly, but much work remains to be done. Challenges have been identified for 2006 and will be monitored by the LHCC.
- Significant progress was reported on the Applications Area, with no major concerns having been identified. Measures have been taken to stabilize the decreasing level of manpower effort in the Applications Area.
- The LHCC notes the significant progress in the Fabric Area. However, the Committee expressed concern on the reported delays related to CASTOR2, and will continue checking on the availability and performance of this system.
- Progress was reported on the Grid Deployment Area, particularly in the fields of Grid Operation and Baseline Services. The deployment of some components of the gLite middleware is very late. Continuing work on the interoperability of the various Grid systems is required.
- The latest Service Challenge 3 provided the LCG Project, computing sites and the experiments with much-needed experience prior to LHC operation in 2007. The lower-than-expected through-put observed in Service Challenge 3 and the associated problems encountered need to be addressed.
- A great deal of progress was reported since the previous LCG Comprehensive Review in November 2004. The organization structure has been adapted to the changing needs of going from the development to the service phase, and resources are being put together.

LCG COMPUTING TECHNICAL DESIGN REPORT

The LHCC recommended general approval of the LCG Technical Design Report on the Computing and the Research Board approved the Technical Design Report.