

Fermilab and the Open Science Grid

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As the coordinator of the Grid projects and activities in the Fermilab Computing Division I am representing a range of people and activities. We help implement Vicky's vision as its Head and help serve the many Experiment groups and user communities that CD supports. Fermilab provides computing facilities and software development and support for many experiments that both use the on-site accelerator and those whose data is collected elsewhere. The Fermilab Computing Division provides extensive computing, storage and network connectivity for all the Fermilab experiment users. It includes groups that contribute to the development of the analysis and infrastructure software for the Run-2 experiments, CDF and D0, SDSS, U.S. CMS and BTeV as well as others. Today we deploy about 2000 computing nodes (mainly duals), Tape Storage of 1.5 Petabytes and Disk Storage of 500 TB. Together with the experiment software and computing groups, the Computing Division has long been leaders in the innovation, development and support of technologies for data storage, access, processing and analysis.

D0 has developed as data grid system from the start of Run 2 developments in the '90s. SAMGrid is now used by CDF, is being deployed for MINOS, and as part of the Particle Physics Data Grid is moving towards integrating into standard grid middleware. For the SDSS data Fermilab Computing Division provides the core of the data distribution and access support. Fermilab is the U.S. CMS Tier-1 Regional Center and as such is heavily involved in the developments and deployments of the distributed LHC computing systems.

Fermilab has significant involvement in the U.S. Physics Grid Projects PPDG and iVDGL, as well as other DOE SciDAC projects - Storage Resource Management ISIC, Lattice QCD and Accelerator Simulation and Modelling. We participate in many common activities and work with many other DOE laboratories on network infrastructure (LBL, SLAC) the LHC (BNL), Lattice QCD (BNL, TJNAF), as well as the many NSF and DOE Universities that are partners in the Fermilab experiment user community. We are committed to making our facilities open and available on a shared Grid. We are committed to enabling our CMS and ATLAS colleagues to deliver the results and discoveries from the LHC.

The FY04 budget and project activities for the Computing Division include several projects which aim to move us along the path of the Open Science Grid roadmap:

- shared production processing facilities between CDF and D0 for Run-2 data analysis.
- a proposal to introduce awareness and exploitation of advanced networking into data management services.
- joint project on Grid Authorization between Run-2 and U.S. CMS
- collaboration between SAMGRID and GridPP on adapting and extending SAM to use standard grid technologies and increased capability for data and job management on the GRID.
- membership of the Global Grid Forum and development of standards for grid services and protocols.