

FY07 Plan for / **Grid / Grid Services / Workload Management System (WMS)**

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Relevant Strategic Plans - Strategic Plan for Grids (2006 - 2008)

WMS Goal

Provide leadership in the areas of workload and resource management for the Fermilab VO's and OSG.

WMS Strategy

“CMS has defined a set of ‘baseline grid services’ which meet its needs for data storage, distribution, processing and analysis of event and simulation data”. WMS is a CMS baseline service.

“DZero relies on SAMGrid job management for job submission for all production activities [...] and is actively transitioning to a forwarding mechanism to use LCG and OSG mechanisms for brokering, resource selection and job execution”. The WMS activity focuses on providing such mechanisms for OSG.

“CD will provide development, deployment, and operations of common grid services and components that will enable many communities to work efficiently in distributed computing environments.”

Grid Services / WMS

Tactical Objectives for FY07

Identify a Workload Management System that handles the foreseen load of job submission for CMS on US CMS and OSG resources.

Deploy the Resource Selection System (ReSS) on OSG and use it as the WMS for DZero production activities.

Deploy and support the WMS chosen by CMS on the OSG.

Collaborate on a common set of Information Services with OSG, EGEE, and peer grids. These services inform WMS infrastructures.

Converge on a common WMS solution on the OSG for the Fermilab VOs, including DZero and CMS.

Provide support for ReSS for the internal resource selection mechanism of Fermigrad.

Investigate applicability of a common solution with OSG.

Grid Services / WMS / DZero Resource Selection System

Deploy the WMS system for DZero activities on OSG by the the 4th Q of 2006, making it stable and production quality by the 1st Q 2007.

Grid Services / WMS / CMS Workload Management System

Evaluate WMS solutions for CMS by the 4th Q 2006.

Deploy WMS on OSG by 2nd Q 2007. Necessary work include: package / integrate / build/ test the CMS WMS in VDT. Package / integrate / deploy / support on OSG software stack.

Gain experience with operations, so that other VOs and/or the OSG Grid Control Center can install, operate, and support it by the 2nd Q 2007

Grid Services / WMS / Common Workload Management System

Collaborate with OSG, EGEE, NDGF, and peer grids on information system activities, including service discovery and resource description model definition.

Evaluate if a common WMS solution for the Fermilab VOs, including CMS and DZero, is possible by the 2nd Q 2007. Evaluate applicability of this solution to FermiGrid by 3rd Q 2007.

Deploy a common WMS for the Fermilab VOs on the OSG by the 3rd Q 2007.

Priorities: The most important objectives are the deployment of independent WMS solutions for CMS and DZero. Support of ReSS for Fermigrid and collaborating with OSG and peer grids on information systems is high priority. The adoption of a common WMS for multiple VOs is desirable and in line with the overall Grid Strategy for the CD, but not essential for operations.

Staffing: We will need to hire or find a person with experience in system integration by the 1st Q 2007. The evaluation and migration of the Fermilab VOs to a common WMS on the OSG will likely require effort particularly on the 2nd and 3rd quarter 2007. It is highly desirable that a new low CP-level hire, e.g. a student, helps maintain the old system, while the developers work on the migration to the new one.

Change control:

Any changes to the current plan need to be communicated to the CD management responsible for DZero and CMS. The OSG executive team will need to be involved in the proposed changes of plan.

Risk Assessment:

Failure to identify a WMS system for CMS may affect the ability of CMS to meet its computing goals. Tier-2 resource efficiency, data throughput, and overall system usability will be impacted mainly for analysis jobs.

Failure to deploy WMS solutions for DZero or CMS on the OSG will impact how effectively experiments can make use of opportunistic resources for production activities.

Failure to deploy a common WMS solution on the OSG may increase maintenance and support costs. VOs that do not have their own WMS solution will use OSG resources less

efficiently. Ineffective use of resources may discourage facilities from joining the OSG.

Failure to collaborate on information services with OSG, EGEE, NDGF, etc., may jeopardize efforts on interoperability activities with peer grids.

Failure to provide appropriate support to FermiGrid for the ReSS WMS infrastructure may cause disruption in the operations of the Fermilab Grid resources. Failure to migrate to a WMS solution for FermiGrid common with OSG will not reduce the maintenance load for WMS services.