

## Towards the 5th LHC VO: The LHC beam studies in the WLCG environment

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Recently a growing number of various applications have been quickly and successfully enabled on the Grid by the CERN Grid application support team. This allowed the applications to achieve and publish large-scale results in short time which otherwise would not be possible.

The examples of successful Grid applications include the medical and particle physics simulation (Geant4, Garfield), satellite imaging and geographic information for humanitarian relief operations (UNOSAT), telecommunications (ITU), theoretical physics (Lattice QCD, Feynman-loop evaluation), Bio-informatics (Avian Flu Data Challenge), commercial imaging processing and classification (Imense Ltd.).

Based on this successful experience, and that of the 4 LHC VOs, the LHC beam team has decided to run their tracking and collimation applications in the WLCG environment. The large amount of jobs, the level of service and the performance requirements as well as the importance of tracking applications for the four LHC experiments makes the LHC beam community a candidate for the 5th LHC VO.

In this talk we present the procedures, tools and services used for enabling the tracking applications in the WLCG environment. We also study the experience of running the LHC tracking applications on the Grid. We draw the analogies with the problems that ITER will have to face in the future to establish a collaboration within the Grid community and make a successful use of the Grid resources.

### Presentation type (oral | poster)

Oral

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