

Progress beyond state-of-the-art

Describe the state-of-the-art in the area concerned, and the advance that the proposed project would bring about. If applicable, refer to the results of any patent search you might have carried out. This section must absolutely include a description of why this project must be funded. The argument should be that funding the coordination of communities (and not individual users) would lead to a sea change within the communities. This in turn would improve the scientific efficient within those communities and open them up to further collaboration. (With significantly lowered barriers because of the grid technology.)

State of the Art

This section should include statistics on the use of the EGEE computing infrastructure and the range of applications. If possible, this should also include concrete examples of important work that was done on the EGEE infrastructure that would not have been possible otherwise.

HEP is the first user community (and the major contributor of resources) to the EGEE grid. All the preparation work (simulation and optimisation of the LHC detectors behavior, setting up of reconstruction and analysis algorithm) has been done on the Grid using its CPU (several 104 running at any time) and for storage (several PB of storage in use). The result is that HEP is the first science to have consistently moved to using grid technologies for its core scientific activities. Although the main focus of HEP in EGEE was on the LHC experiments the HEP community at large is using the Grid infrastructure and notably EGEE to complete existing experimental programmes and to plan for new ones.

Examples of Scientific Work

Provide examples of scientific work with exceptional visibility or socio-economic impact carried out on the current grid infrastructures that would not have been possible without the grid. (Limit the description to a single sentence with a few sentences describing the importance of the result.)

HEP drove the move of grid infrastructures (notably EGEE) to deliver production-quality services. In the past most of the computing for an HEP experiment was performed at the hosting laboratory. The adoption of the Grid in the HEP community and the relevant contribution to related technologies made possible to deploy the necessary computing power and storage in a distributed way across the participating countries. This made possible the development of diffuse network of centres of competences providing quality service to HEP but at the same supporting other scientific communities.

<other ideas>

- Grid inauguration side-by-side with the LHC turn-on day (Sept. 2008)
- Contacts with new communities