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Consolidation and development roadmap of the EMI middleware

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Scientific research communities have benefited recently from the increasing availability of computing and data infrastructures with unprecedented capabilities for large scale distributed initiatives. These infrastructures are largely defined and enabled by the middleware they deploy. One of the major issues in the current usage of research infrastructures is the need to use similar but often incompatible middleware solutions.

The European Middleware Initiative (EMI) is a collaboration of the major European middleware providers ARC, dCache, gLite and UNICORE. EMI aims to: deliver a consolidated set of middleware components for deployment in EGI, PRACE and other Distributed Computing Infrastructures; extend the interoperability between grids and other computing infrastructures; strengthen the reliability of the services; establish a sustainable model to maintain and evolve the middleware; fulfill the requirements of the user communities.

This paper presents the consolidation and development objectives of the EMI software stack covering the next two years. Details will be given concerning how the most important requirements of the key user groups, including the high energy physics community, were taken into account. The EMI development roadmap will be introduced along the four technical areas of compute, data, security and infrastructure.

The compute area plan focuses on consolidation of standards and agreements through an unified interface for job submission and management, a common format for accounting, the wide adoption of GLUE schema version 2.0 and the provision of a common framework for the execution of parallel jobs. The security area is working towards a unified security model and lowering the barriers to Grid usage by allowing users to gain access with their own credentials. The data area is focusing on implementing standards to ensure interoperability with other grids and industry components and to reuse already existing clients in operating systems and open source distributions. One of the highlights of the infrastructure area is the consolidation of the information system services via the creation of a common information backbone.

Wherever possible early results of the consolidation plan and the ongoing development will be covered by introducing EMI technical agreements and development prototypes.

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