



eInfrastructures



The EU eInfrastructures Initiative

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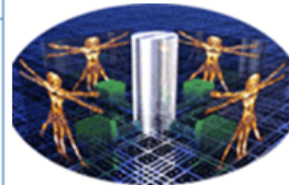
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Recent advances in Europe in the area of Research Infrastructures resulted in Pan-European coverage by a high-speed research network (GEANT), the fastest in the world, including a full-fledged administrative and operational support.

The gradual deployment of broadband networks throughout the research community and the fact that network capacity grows with much greater rate than CPU power and storage capacity led to the creation of a distributing environment for sharing resources known as the Grid paradigm.

This integrated networking & middleware environment is also called eInfrastructure. The technologies of the Grid-enabled eInfrastructure, which are being developed around the world, allow new methods of global collaborative research - often referred to as e-Science. A number of research initiatives in Europe and the World (building on the availability of high-speed networks and broadband access, advanced virtual environments and the Grid-middleware technologies) are creating pilot implementations and collaborative models for use of computing and data resources across technological, administrative and national domains. In addition to the above-mentioned initiatives, some national programmes in Europe are creating a model for the shared use of resources on the national level across institutional and user application domains. The national and international initiatives developed, are making the "World Wide Grid" and its applications one of the major global research and development topics of the this century and are creating the expectation that Grid and networking technology is maturing quickly enough to support the emergence of a new infrastructure paradigm that in time will come to be seen as a commodity service. The full exploitation of the new paradigm with such a broad scope and cross border relevance like the eInfrastructures concept can better (and in some cases only) happen when the appropriate administrative and policy decision mechanisms are put in place. The creation of such an eInfrastructure, which will provide fully integrated communication and information processing services, is a key objective of the European Research Area. The acceptance and use of such an infrastructure has the potential to dramatically change the way in which people work and do business over the Internet today and this is the reason why Grids are seen by many people today as the enabling technology for the next generation of science and business applications.