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e-Infrastructures for e-Science: A Global View

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Abstract

In the last 10 years, a new way of doing science is spreading in the world thank to the development of virtual research communities across many geographic and administrative boundaries. A virtual research community is a widely dispersed group of researchers and associated scientific instruments working together in a common virtual environment. This new kind of scientific environment, usually addressed as a “collaboratory”, is based on the availability of high-speed networks and broadband access, advanced virtual tools and Grid-middleware technologies which, altogether, are the elements of the e-Infrastructures. The European Commission has heavily invested in promoting this new way of collaboration among scientists funding several international projects with the aim of creating e-Infrastructures to enable the European Research Area and connect the European researchers with their colleagues based in Africa, Asia and Latin America. In this paper we describe the actual status of these e-Infrastructures and present a complete picture of the virtual research communities currently using them. Information on the scientific domains and on the applications supported are provided together with their geographic distribution.

Keywords e-Infrastructure – e-Science – Virtual research communities – Virtual organization – Gridification

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