Contribution ID: **98** Type: **Poster**

Grid based telemedecine application for Monte Carlo dosimetric studies

Describe the scientific/technical community and the scientific/technical activity using (planning to use) the EGEE infrastructure. A high-level description is needed (neither a detailed specialist report nor a list of references).

Nowadays, grid technology offers new possibilities in terms of storage and data sharing capabilities. To overcome medical data heaviness and confidentiality, new tools have been developed enabling the secure storage and sharing of medical information. Based on EGEE middleware (gLite), our application is a medical information system allowing physicians to easily exploit grid capabilities to store and securely share medical data and images, coming from hospital's PACS systems.

Report on the experience (or the proposed activity). It would be very important to mention key services which are essential for the success of your activity on the EGEE infrastructure.

The Medical Information Platform (MIP) is mainly based on Web Service technology that implements, through gLite Grid Services, the interaction with various EGEE Grid components. This platform creates an abstraction layer between users and the Grid tacking care of all the processes involving interaction with Grid or sensitive information management and sharing. MIP users access the platform using a web portal developed on top of GridSphere Portal Framework taking advantage from the flexibility and modularity offered by portlet technology. Patients information are stored in an AMGA server installed in each hospital while the images are stored encrypted in Grid SEs. Information privacy and security constraints avoid replication of information between AMGA servers installed in different hospitals. For this reason we implemented on-request data exchange, between users and the platform, uses SOAP protocol over an SSL secured connection.

Describe the added value of the Grid for the scientific/technical activity you (plan to) do on the Grid. This should include the scale of the activity and of the potential user community and the relevance for other scientific or business applications

Today medical informations are digitalized and this opens new opportunities for physicians in terms of information exchange but the resources needed inside hospitals to manage these medical images is a growing issue. Using the EGEE middleware and Web Service technology we developed a distributed medical platform that allows physicians to manage and exchange patient information (clinical information and medical images) securely between different hospitals through the EGEE Grid. In a near future hospitals will find in the Grid the solution to store and manage their medical data. Moreover we also plan to use grid computational resources to run Monte Carlo simulations on medical images to estimate "a priori" the radiation dosimetry in cancer treatment. This is a very complex and CPU intensive job that can be parallelized over several grid nodes to reduce computation time.

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