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# Using GridCC for Remote Operations of an Accelerator

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Traditional developments in Grid technologies have concentrated on providing batch access to distributed computational and storage resources. The requirements to access, control, and acquire data from widely networked distributed instruments trigger the need to include a variety of new components. For instance, scientific equipment like sensors and probes are a need in nowadays Grid infrastructures. This, in turn, raises the need for supporting real-time operations and interactive work, thus opening a new frontier of research and development in this field.
The GridCC Project, launched in September 2004 by the European Union, addresses these issues. The goal of GridCC is to exploit Grid opportunities for secure and collaborative work of distributed teams to remotely operate and monitor scientific equipment. In addition, GridCC will allow to exploit the Grid's massive memory and computing resources for storing and processing data generated by this kind of equipment.
In this talk we present first the status of the GridCC Project, focusing then on the real applications that have been equipped with our middleware. We have three main running use cases, from the run control of a high energy physics experiments, to the remote control and monitoring of a grid of small power generators and, finally, to the far remote operation of a particle accelerator. Other applications that have adopted our approach will be also presented; their field ranges from meteorology, to education, to the control of the territory (geo-hazard) and to the remote control and monitoring operations of telecommunication measurement equipment.

Lastly, the integration with the gLite components will be highlighted, showing how
the services'orchestration through a workflow engine has been introduced. Our
approach, based ontwo levels (namely, strict and loose) of guarantees to support and
monitor the real-time and interactive requirements will be also shown.

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