



## Job Interactivity using a Steering Service in an Interactive Grid Analysis Environment

*Wednesday 29 September 2004 10:00 (1 minute)*

In the context of Interactive Grid-Enabled Analysis Environment (GAE), physicists desire bi-directional interaction with the job they submitted. In one direction, monitoring information about the job and hence a “progress bar” should be provided to them. On other direction, physicist should be able to control their jobs. Before submission, they may direct the job to some specified resource or computing element. Before execution, its parameter may be changed or it may be moved to another location. During execution, its intermediate results should be fetched or it may be moved to another location. Also, physicists should be able to kill, restart, hold and resume their jobs.

Interactive job execution requires that at each step, the user must make choices between alternative application components, files, or locations. So a dead end may be reached where no solution can be found, which would require backtracking to undo some previous choice. Another desire is reliable and optimal execution of the job. Grid should take some decisions regarding the job execution to help in reliable and optimal execution of the job. Reliability can be achieved using the job recovery mechanism. When a job on grid fails, the recovery mechanism should resubmit the job on either the same resource or on different resource. Check-pointing the job will make resource utilization low when recovering the job from failure.

In this paper the architecture and design of an autonomous grid service is described that fulfills the above stated requirements for interactivity in Grid-enabled data analysis.

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**Session Classification:** Poster Session 2

**Track Classification:** Track 5 - Distributed Computing Systems and Experiences