

## **Grid Workflow Management System**

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The goal of our work is providing a workflow management system for interoperability among different grid middleware such as gLite, Unicore and Globus. It allows the composition of batch, parameter sweep and MPI based jobs. The engine implements the logic to execute them by using a standard language such as JSDL, OGF compliant, that has been extended for this purpose. Our engine has been designed taking into account the following requirements: (i) ability to handle workflows described by DAGs; (ii) ability to handle complex workflows described by arbitrary graphs, supporting cycles and conditions; (iii) support for recursive composition, i.e. the possibility to define a workflow vertex as a sub-workflow or parameter sweep vertex instead of a batch task; (iv) support for secure remote execution by means of GSI protocol. Currently, we are testing our system on bioinformatics case studies in the International Laboratory of Bioinformatics (LIBI) Project ([www.libi.it](http://www.libi.it)).