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Kwf-Grid workflow management system for Earth science applications

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In this paper, we present workflow management tool for Earth science applications in EGEE. The workflow management tool was originally developed within K-wf Grid project for GT4 middleware and has many advanced features like semi-automatic workflow composition, user-friendly GUI for managing workflows, knowledge management. In EGEE, we are porting the workflow management tool to gLite middleware for Earth science applications

K-wf Grid workflow management system was developed within "Knowledge-based Workflow System for Grid Applications" under the 6th Framework Programme. The workflow mangement system intended to
- semi-automatically compose a workflow of Grid services,
- execute the composed workflow application in a Grid computing environment,
- monitor the performance of the Grid infrastructure and the Grid applications,
- analyze the resulting monitoring information,
- capture the knowledge that is contained in the information by means of intelligent agents,
- and finally to reuse the joined knowledge gathered from all participating users in a collaborative way in order to efficiently construct workflows for new Grid applications.

Kwf Grid workflow engines can support different types of jobs (e.g. GRAM job, web services) in a workflow. New class of gLite job has been added to the system, allows system to manage and execute gLite jobs in EGEE infrastructure. The GUI has been adapted to the requirements of EGEE users, new credential management servlet is added to portal. Porting K-wf Grid workflow management system to gLite would allow EGEE users to use the system and benefit from its avanced features. The system is primarly tested and evaluated with applications from ES clusters.