SHIWA: SHARING INTEROPERABLE WORKFLOWS FOR LARGE-SCALE SCIENTIFIC SIMULATIONS ON AVAILABLE DCIS

Funding Body:	EU	Programme:	Framework Programme 7
Start Date:	01/07/2010	End Date:	31/06/2012

Partners

- Laboratory of the Parallel and Distributed Systems in the Computer and Automation Research Institute of the Hungarian Academy of Sciences (MTA-SZTAKI), Hungary (Coordinator)
- University of Innsbruck, Austria
- Charité – Universitätsmedizin Berlin, Germany
- Centre National de la Recherche Scientifique (CNRS), France
- Centre for Parallel Computing, University of Westminster, UK
- Cardiff University, United Kingdom
- Academic Medical Center of the University of Amsterdam, The Netherlands.

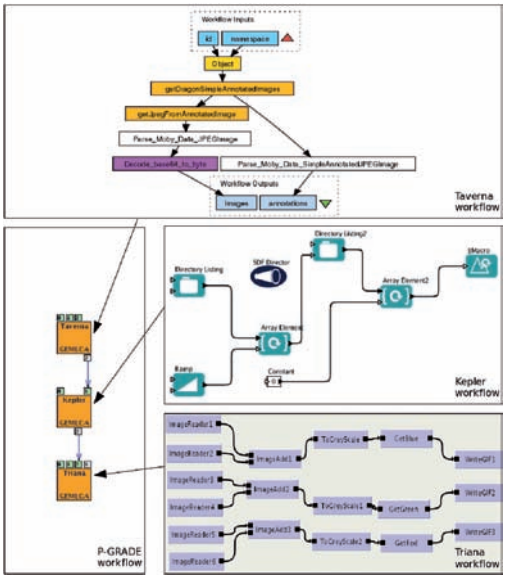
Website

http://www.shiwa-workflow.eu/

Synopsis

Researchers of all disciplines, from Life Sciences and Astronomy to Computational Chemistry, create and use ever-increasing amounts of complex data, and rely more and more on compute-intensive modelling, simulation and analysis. Scientific workflows have become a key paradigm for managing complex tasks and have emerged as a unifying mechanism for handling scientific data. Workflows capture the essence of the scientific process, providing a means to describe it via logical data- or work-flows. Workflows are mapped onto concrete Distributed Computing Infrastructures (DCIs) to perform large-scale experiments. The learning curve for reusing workflows, however, is still steep because workflows typically have their own user interfaces/APIs, description languages, provenance strategies, and enactment engines, which are not standard and do not interoperable. Workflow integration or reuse therefore is currently impractical, thereby inhibiting the growth in uptake and proliferation of workflows in scientific practice.

The SHIWA project aims to leverage existing solutions and enable cross-workflow and inter-workflow exploitation of DCIs by applying both coarse- and fine-grained strategies. The coarse-grained approach treats workflow engines as distributed black box systems, where complete sub-workflows are sent to pre-existing enactment engines. The fine-grained approach addresses language interoperability by defining an intermediate representation to be used for translation of workflows across systems (currently selected: ASKALON, Pegasus, P-Grade, MOTEUR, Triana). SHIWA will develop, deploy and operate the SHIWA Simulation Platform to offer users production-level services supporting workflow interoperability following both approaches. A Repository will facilitate publishing and sharing of workflows, and a Portal will enable their actual enactment. Three use cases based on medical imaging applications will serve to drive and evaluate this platform from a users' perspective.



Brief USP

Enabling Distributed Computing Infrastructure workflows built according to different workflow conventions, to interoperate.

Contact:

Gabor Terstyanszky
E: g.terstyanszky@westminster.ac.uk

A charity and a company limited by guarantee.
Registration number: 977818.
Registered office: 309 Regent Street, London W1B 2UW
5091/06.11/SH