Interoperability of Virtual Organizations on a Complex Semantic Grid
Project funded by the European Community under the
Information Society Technology Programme Contract IST-2004-004664
www.inteliGrid.com || www.ve-forum.org/Grid_SIG/
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InteliGrid Newsletter

Issue 4 November 2005

Introduction

Being another "even" newsletter, this issue #4 is providing a report on what the project achieved in the previous 6 month period synthesising some information from the periodic activity reports.

Work performed and results achieved

The project started Sept 1st 2004. The technical efforts were mainly taking part in WP1-4 and were reporting in cross workpackage deliverables D11,D12,D13 and D14 as well as in local WP Deliverables. The technical work was focusing on:

State of the art and market watch studies.

These are documented in the deliverable D11.1 State of the art and market watch report. It provides an overview of the state of the art in topics on which the InteliGrid project is building on, including web, grids and semantic grids in particular, virtual organisations and interoperability. The market watch is exploring the areas of engineering collaboration, engineering data management and grid based engineering applications.

System architecture

Initial drafting of the system architecture was documented in the D13.1 Semantic Grid Architecture. InteliGrid is building on established reference architectures or architectural principles including VORA (Virtual Organization Reference Architecture), MDA (Model Driven Architecture), SOA (Service Oriented Architecture) and OGSA (Open Grid Services Architecture). The architecture distinguishes between three layers - the conceptual layer, the services layer and the primitive resource layer. The first deals with concepts, the second with executable software and the third with software and hardware which is at a level of detail not of creative interest to this project.

Requirments

Requirements analysis that is documented in the deliverable D12. Requirements were gathered in two ways: (1) *bottom-up* - from partners, using a unified template for requirement capture as well as end-user interviews to collect and examine typical business tasks, and (2) *top-down* – using partner know-how and expertise to define high-level requirements that were then verified against the collected 'raw' use cases. A novel process-centric methodology was applied that allowed associating, in a coherent manner, business tasks with the involved actors and their information and communication requirements. A total of 111 requirements were identified, structured according to priority (must have, should have, nice to have) and topic ranging form user requirements to infrastructure requirements.

Demonstration scenario

Drafting the demonstration scenarios that are documented in the D14.1 Demonstration, Iteration 1 - Scenario and Mock up. The demonstration scenarios are selected in such a way that the semantic grid provides an added value in the industry and in the virtual organization contexts where interoperability is a challenge. The scenarios proposed are: (1) earthquake engineering design on the grid - small demonstrator also used for the initial testing of the platform; (2) building life cycle - showing interoperability over a life cycle of a product, from design to maintenance and operation and (3) aircraft design/borrowed demonstrator - demonstrating applicability of the InteliGrid platform outside of the architecture, engineering and construction sectors.

Technical infrastructure

To facilitate prototyping as well as early testing the InteliGrid testbed based on Globus Toolkit 3.2.1 pre-

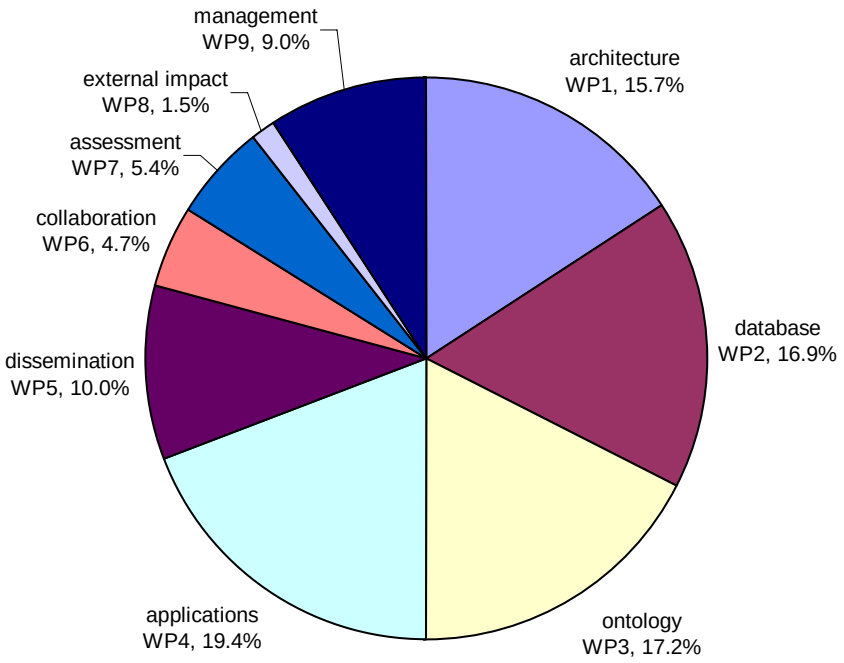
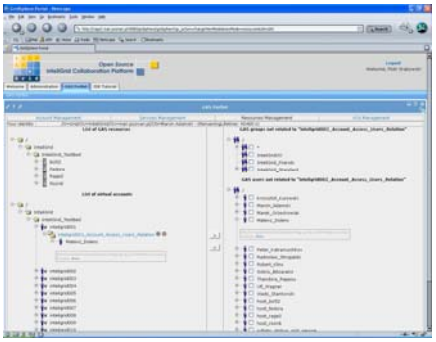


Figure: Distribution of effort in InteliGrid in the first 12 months.

WS was established at http://testbed.inteligrid.com with dedicated grid resources at PSNC, TUD, SOF and LJU. We use core Globus services, GRIS, GSISSH, GridFTP, and Gatekeeper. All these services have been described in deliverable D41.1 Grid adaptors and interfaces. For administration the GridSphere Framework was deployed.

In addition to GAS, we have also deployed middleware for exposing semantically rich data models, e.g. WebDav, XML in addition to relational or files by extending OGSA-DAI services.



Dissemination

Corporate image of the project was established; the project website at www.inteligrid.com was created and later re-organised to focus on the potential end users, project digital library is on-line, several papers (including keynote and invited) have been written and presented at international conferences, 3 newsletters have been published, industry advisory board was established (8 excellent members). InteliGrid organised a workshop Virtual Enterprising on the Grid as part of the 11th International Conference on Concurrent Enterprising (ICE 2005) in Munich, Germany as well as a grid workshop in the context of the eChallenges Conference in Ljubljana, Slovenia.

Collaboration and concertation

Collaboration and concertation activities are reported in D62.1 Collaboration report and plan deliverable. The project is concerting with other grid projects, particularly with OntoGrid and K-Wf Grid projects on the semantic grid issues. It participated in EU sponsored concertation meetings as well as at the Semantic Grid: The Convergence of Technologies, Dagstuhl, Germany. Collaboration with VIVACE IP project has also started. All collaboration activities ware.

Exploitation

Exploitation planning has started taking the Five Steps to Successful Exploitation as a guideline. It was documented in the D52.2 which includes realistic exploitation planes of each partner.

Evaluation and impact assessment

Evaluation and impacts assessment: work started both on internal and external evaluation; the subject of evaluation were most of the technical achievements.

Project management

Management of the project included the setting up of the infrastructure and environment. This includes the legal infrastructure (documented the Consortium agreement), the detailed definitions of roles and responsibilities and workflows (documented in the Project Manual), the technical infrastructure (document management system, real time collaboration systems, mailing lists) and the various logos and templates.

Risk management too has looked at the results of the technical work and came up with some initial analyses and corrective actions documented in D72.1

Resources

During the reporting period the consortium held two plenary meetings with all partners present, one technical meeting (with all but two partners). The partners used several other opportunities to meet as well. In terms of resources used, the project as a whole is used 38% of the costed person-months and 260% of the non-costed person months in the first 40% of the duration of the project. It claimed 35% of the costs.

In the grid ...

These are some of the events at which the project partners took part between February and September 2005. InteliGrid project maintains a complete bibliography at www.InteliGrid.com -> results.

The Tenth International Conference on Civil, Structural and Environmental Engineering Computing.

The 22nd CIB-W78 Conference, Information Technology in Construction, Dresden, Germany.

The 18th International Conference on Production Research , Salerno, Fisciano (SA), Italy 2005.

Innovation and the Knowledge Economy: Issues, Applications, Case Studies, Paul Cunningham and Miriam Cunningham (Eds), 2005 IOS Press Amsterdam, ISBN: 1-58603-563-0

Semantic Grid, The Convergence of Technologies, Dagstuhl, July 3-8, 2005.

European Grid Technology Days, Brussels, June 1, 2005

International Conference on Computing in Civil Engineering, American Society of Civil Engineers - ASCE, Cancun, Mexico, July 12-15, 2005.

11th International Conference on Concurrent Enterprising, University BW Munich, Germany,20-22 June 2005.

International Conference on Information Technology Coding and Computing, ITCC 2005, (Sponsored by IEEE Computer Society), April 4-6, 2005, Las Vegas, NV, USA

Key Project Figures

Partners:	9 from 7 countries
EU funding:	2.1 MEuro
Total funding:	3.1 MEuro.
Effort:	360 person months
Duration:	30 months
Start-end:	1.9.2004 - 28.2.2007

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