

more than twenty. As a qualitative improvement, we will commence operating an ASP (Application Service Provider) centre in 2007, which will provide qualified e-governmental applications for e-municipalities.

At the request of governmental executives, we established a Hungarian-Austrian workgroup, which collects and presents international experience in developing and using citizen e-cards. In Austria each citizen has his/her own multipurpose e-identity card, and we would like to implement a similar initiative in Hungary.

Since we consider the wide-ranging familiarization and acceptance of the results of e-governance to be especially important, we organize conferences and other programmes, and prepare professional e-learning materials. Among other things, we have organized several conferences with the aim of improving the e-governance knowledge of the civil service, and have completed the first two professional educational DVDs in the 'Electronic Governance' e-learning series.

Our experience in e-governance and the methodologies that we will develop in the near future will make it possible to catch up with those countries where computer techniques are widely used. Moreover, these experiences can be handed over to other similar countries, making them valuable in international relations.



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The Bridge Project: Cooperation between Europe and China to Develop Grid Applications

by Gilbert Kalb

Launched with a kick-off meeting in Southampton on 25 January, the Bridge Grid Project is designed to encourage bilateral research and industrial development that will enhance and integrate Grid-enabled technology for industrial cooperation between Europe and China.

The Bridge project builds on major Grid efforts on both sides. The European part is based on the SIMDAT project (Data Grids for Process and Product Development using Numerical Simulation and Knowledge Discovery), which joins forces for product development and production process design using Grid services. CN Grid, a similar project with comparable objectives, was launched in China in 2002. While SIMDAT uses

GRIA (GRID Resources for Industrial Applications), GN Grid is based on GOS (Grid Operation System). Both are independent developments.

The two systems have attracted wide support from industrial players using Grid technology and consequently large investments in their respective countries. Bridge intends to combine the two worlds through interoperability. IT Inno-

vation from Southampton and Beihang University from Beijing will work on the underlying infrastructure. These partners played a significant role in the original development of the two systems.

Application Scenarios

Showcase applications for the new interoperable Grid platform were chosen from three different fields. They will show a general proof of concept

and will simultaneously help to shape the infrastructure through their specific needs and requirements.

Aviation: EADS on the European side and AVIC II from China will use the infrastructure developed in Bridge for various simulations of improved designs, for example of aircraft wings. A work package concerned with this development is led by the company LMS (Belgium). LMS will adapt and improve the Grid middleware with the support of Fraunhofer SCAI.

Meteorology: The European Center for Medium-Range Weather Forecasts (EDMWF) together with the Chinese National Meteorological Information

Center (NMIC) will use Bridge infrastructure for faster and more precise predictions of weather-related phenomena and disasters. The Deutsche Wetterdienst (DWD) will support them in developing this application scenario.

Drug Discovery: InforSense (UK) and the Shanghai Institute for Medical Material (SIMM) will use Bridge-based workflows to improve their development of new drugs for fighting bird flu, dengue fever and malaria. Docking tools from both partners will run on the interoperable middleware provided with the Bridge infrastructure.

Each of these applications has a high demand for computing intensive serv-

ices and a special need for cooperation between Europe and China.

Fraunhofer Gesellschaft is responsible for the overall management of the Bridge project, and is providing special tools to improve the performance of the aviation and pharmaceutical applications. The Bridge project is supported by the European Union, with 1.7 billion euro for 24 months.

Link:

<http://www.bridge-grid.eu/>

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DELOS-MultiMatch Workshop on Ontology-Driven Interoperability for Cultural Heritage Digital Objects

by *Vittore Casarosa and Carol Peters*

Nearly forty researchers and practitioners in the IT and cultural heritage sectors participated in a one-day workshop on "Semantic-driven Interoperability for Digital Objects in the Cultural Heritage Domain". The workshop was organised as a joint DELOS – MultiMatch event in conjunction with the DELOS Conference, held in Tirrenia, Pisa, 13-15 February 2006.

Interoperability is a hot topic within the digital library and distributed information retrieval research communities. This is also evidenced by the fact that the European Commission has just set up a working group on Interoperability and Multilingualism as part of the i2010 digital library initiative. The DELOS Network of Excellence and the MultiMatch specific targeted research project both have strong interests in this area. For this reason, it was thus decided to organise a joint DELOS – MultiMatch workshop in order to investigate the current state-of-the-art, and discuss those issues that currently hinder the widespread adoption of standards and impede interoperability.

The goal of Multimatch is to develop a system that will enable users to explore and interact with online cultural heritage (CH) content across media types and language boundaries (see ERCIM News 66, July 2006). This means that the project is acquiring large volumes of hetero-

geneous domain-specific data both directly from CH content providers but also via focussed web crawling. This data must be processed and categorised. The original idea for the workshop thus resulted from early discussions within MultiMatch aimed at defining of the most appropriate metadata schema and conceptual framework for the project. It was felt that it could be very beneficial to be able to exchange ideas and experiences with people working on similar problems.

DELOS has long been concerned with questions concerning interoperability and has published a comprehensive report on Semantic Interoperability in Digital Library Systems (publicly available on the DELOS website). The DELOS conference offered the perfect venue for this workshop and a number of experts in the field (both theoreticians and practitioners) were thus invited in order to share their expertise and experiences and advise the MultiMatch group.

The workshop opened with a brief presentation by Neil Ireson (University of Sheffield) in which he illustrated the main factors impacting on the definition of the MultiMatch knowledge representation framework, the problems currently being addressed and the solutions being considered. The aim was to set the context for the following discussions.

The remainder of the morning session was dedicated to the keynote talks. Martin Doerr (FORTH, Crete), Maja Jumer (University of Ljubljana) and Chrisa Tsinaraki (Technical University of Crete) presented three of the best known existing conceptual frameworks (CIDOC-CRM, FRBR and MPEG-7) and some of the relationships between them. These talks were followed by a lively panel discussion, moderated by Stavros Christodoulakis, aimed at investigating how these frameworks can be made interoperable. During this discussion, Martin Doerr pointed out that in his opinion there is a fundamental con-