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ARTE and ImpECt: exploiting the Diligent prototype

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DILIGENT is an ongoing EU IST project whose goal is to deliver an infrastructure making possible to define and dynamically create virtual digital libraries by reusing available resources. A virtual digital library is a pool of resources dynamically aggregated to meet the user requirements where these resources range from information sources to services exploiting computing and storage Grid capabilities. In addition to such main goal and to prove the viability of the released infrastructure to meet their requirements and improve their daily work, two user communities (ARTE and ImpECt) belonging to different application contexts have been selected. As a consequence, DILIGENT is a project that sits over Grid and Digital Library (DL) technologies and it is influenced by requirements arising in the Cultural Heritage and Earth Observation domains (the user communities). In particular, the project heavily relies on the concept of resources sharing because the foundational concept of virtual digital library has been envisaged by elaborating on and cannot be implemented without this Grid facility. By providing to the user communities (i) the capability to dynamically create DL, and (ii) to have access to an huge computing and storage capability, all this with an acceptable management cost, DILIGENT promises to revolutionise the way through which joint research is conducted and propose novel application scenarios. New kinds of functionality can be envisaged or improvement of already existing functionality can be implemented, the management of new kind of knowledge becomes feasible, new way to organise research processes can be implemented. In such a scenario EGEE plays a fundamental role. In fact, being EGEE in charge to provide a big production quality Grid infrastructure serving a myriad of applications, it represents the most attractive provider for

an organised and ready
to use pool of computing and storage facilities.
The Diligent project is currently testing the first
prototype that will be delivered
by the end of September '06.
According to the Diligent implementation plan, this version
is not fully-fledged.
Rather it supports the basic DL functionalities required to
satisfy the main user
communities' requirements.
The aim of this demo is to introduce the current Diligent
prototype through the
presentation of the ImpECt and the ARTE application scenarios.

The ImpECt scenario (Implementation of Environmental
Conventions) demonstrates the
use of a grid-based digital library for Earth Sciences.

The ImpECt digital library, besides the Diligent basic
services, is currently
providing access to the following information sources and
services:

- (1) a collection of processed satellite images showing the
vegetation index;
- (2) a collection of digital objects about background
information on MERIS;
- (3) the MGVI (MERIS Global Vegetation Index) external service.

The sources together with their metadata are maintained by
the DILIGENT content
management and metadata management, and can be queried by
region, time, and content.

The MGVI service is integrated by means of the DILIGENT
process management. In
addition, searches on external sources (e.g. Google) are
supported using the DILIGENT
search facilities.

Search results can be browsed and used for generating, for a
particular time frame
and location, environmental reports based on a user-defined
template. These
user-defined reports can then be saved and indexed in the
digital library as newly
available information. The user interface for search, result
browsing, and report
generation is realized by means of portlets hosted on a
GridSphere portal.

The ARTE scenario demonstrates the use of a grid-based
digital library for cultural
heritage domain. Its community, represented by educational
institutions (Schools
and/or Universities) and by the Italian educational
broadcasting network, shares a
set of archives with multimedia content with the aim to
combine them in complex
learning objects, named courses. Once a course is built, it
is stored and made
available to be reused in and adapted for new didactic
contexts.

In addition to the management of courses, the ARTE DL
provides functionalities to
store, manage, and retrieve all kind of information objects
related to them, such as
images, texts, audio/video recording, etc.

The current ARTE DL provides access to a number of community specific information sources, such as between the others, the “Progetto Emblemata. ‘Con parola breve e con figura’ Libri antichi di imprese e di emblemi”; “A Celebration Of Women Writers”; “Arts And Humanities Data Service”; “Bayerische”; “Gallica”; “Perseus”; “Emblem Project Utrecht”; “RAI Medita” collections. In order to securely store and make available these set of copyrighted information objects on the Diligent Grid infrastructure, the Diligent content security facilities have been largely used.

Summary

The aim of this demo is to introduce the current Diligent prototype through the presentation of the ImpECt and the ARTE application scenarios. The ImpECt scenario (Implementation of Environmental Conventions) demonstrates the use of a grid-based digital library for Earth Sciences. The ARTE scenario demonstrates the use of a grid-based digital library for cultural heritage domain.

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