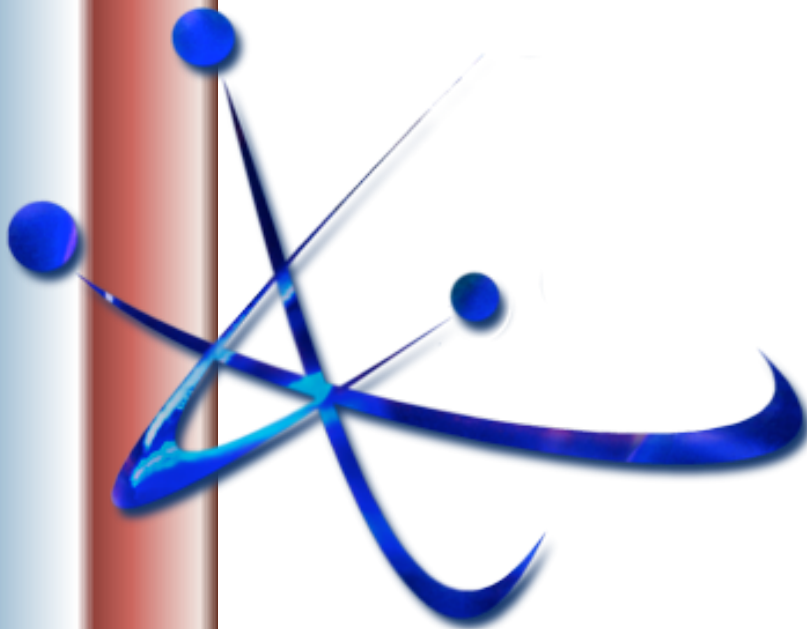


View from Around the Globe and Across Sectors

Donatella Castelli

CNR-ISTI

Pisa, Italy



DELOS: Grand 10-Year Vision

“The potential exists for digital libraries to become the universal knowledge repositories and communication conduits for the future, a common vehicle by which everyone will access, discuss, evaluate, and enhance information of all forms”

Global DL

Research DL

Global: lesson learned

- **Sharing of resources**
 - metadata and information objects + ontologies, thesauri, services, computing and storage capabilities
- **Interoperability**
 - metadata + content, functionality, user, quality, policy and architecture
- **Quality issues**
 - scalability, availability, performance ...

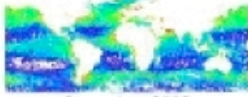
Research: lesson learned

- a fixed text
- a pollution map
- a table summarizing data from millions of observed satellite measures
- a graph reporting an analytical trend of certain information extracted from a great amount of observed data

**International Report on
Mediterranean Sea Chlorophyll Distribution during year 2003**

1. Scientific and Societal Concerns
Any scheme to monitor the ocean biota and their environment must strive to address the major scientific and societal concerns of the day pertaining to marine life. This section summarises some major concerns that emerged during discussions at the meeting. Many other concerns could have been included, but space precludes a complete listing of concerns.

1.1. Biodiversity and Conservation
Marine biodiversity is not easy to assess and is generally poorly known. There are many complicating factors, including a three-dimensional, fluid, mobile environment, its vastness, and its challenging depths. Away from shore, primary producers and primary grazers are usually small, drifting forms that undergo spatial variability and seasonal changes. The larger invertebrate grazers have a range of life history stages, often with planktonic and benthic phases. Many large animals are migratory. Ocean habitats can be linked by the dispersal of planktonic larvae, and in this way, the systems can be interconnected even at a distance.

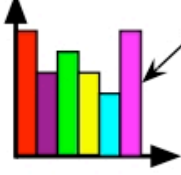


Jan - Apr 2003

Finally, the higher-order diversity of life is much greater in the oceans than in terrestrial systems—there are 13 unique phyla in the oceans and only one on land. Marine biodiversity is essentially the evolutionary history of life. In general, long-term environmental stability seems to increase biodiversity and, conversely, global climate change can be expected to decrease it.

	X1	X2	X3	X4	X5	X6	X7	X8	X9
Y1	12	13	15	26	11	34	45	45	54
Y2	32	12	46	67	21	22	44	12	44
Y3	23	33	56	77	32	44	12	55	33
Y4	44	34	12	55	34	45	12	22	44

Measures of yyy



Values of xxx

Automatically updated with the most recent data

Research: lesson learned (cont.)

- **Functionality re-thinking**
 - creation, access, visualization, search, preservation, etc.
- **Sustainability**
 - Operational cost

Global Research Library: lesson learned (cont.)

- **Virtual Research Communities**
- **GRL as a basic enabling framework for Virtual Research Environments**

CNR – some of our project

- **DRIVER (2006-2007) and DRIVER II (2008-2009)**
<http://www.driver-repository.eu/>
- **DILIGENT (2005-2007)** <http://www.diligentproject.org>
- **D4Science (2008-2009)**
- **DELOS (2004-2007)** <http://www.delos.info/>

DRIVER I

- To develop a test-bed for **integrating existing national, regional and thematic repositories** in order to create a **European Repository Infrastructure**. This infrastructure will make accessible worldwide, through an initial set of advanced services, these repositories virtually organised and structured according to the needs of different user communities.
- To identify and promote the use of **a relevant set of standards**
- To prepare the future expansion and upgrade of a **Digital Repository Infrastructure** across Europe and to ensure widest possible user involvement



DRIVER II

- **Organization**
 - Building a Confederation of European Digital Repositories
- **Data**
 - Extending the virtual Information Space over multiple and heterogeneous repositories
- **Software**
 - Consolidating and enhancing the Infrastructure to operate a production quality system with advanced user functionalities
 - Built a repository sw capable to manage compound objects linked to data

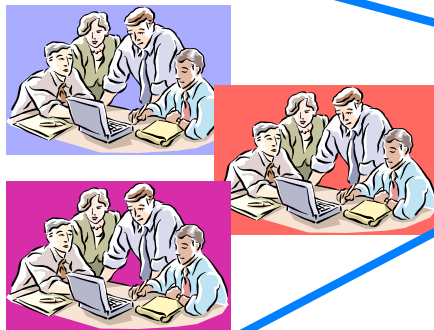
DILIGENT Objective

Create a Digital Library Test-bed Infrastructure that allows members of **dynamic virtual research communities** to create **on-demand transient virtual digital libraries** based on **shared computing and storage capabilities, multimedia, multi-type content and application resources**



DILIGENT DL infrastructure

Consumers



Infrastructure enabling services

DLMS services

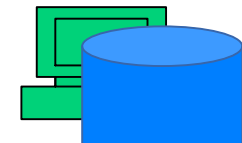
Providers



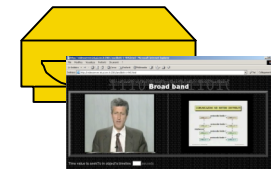
3D processing



simulation

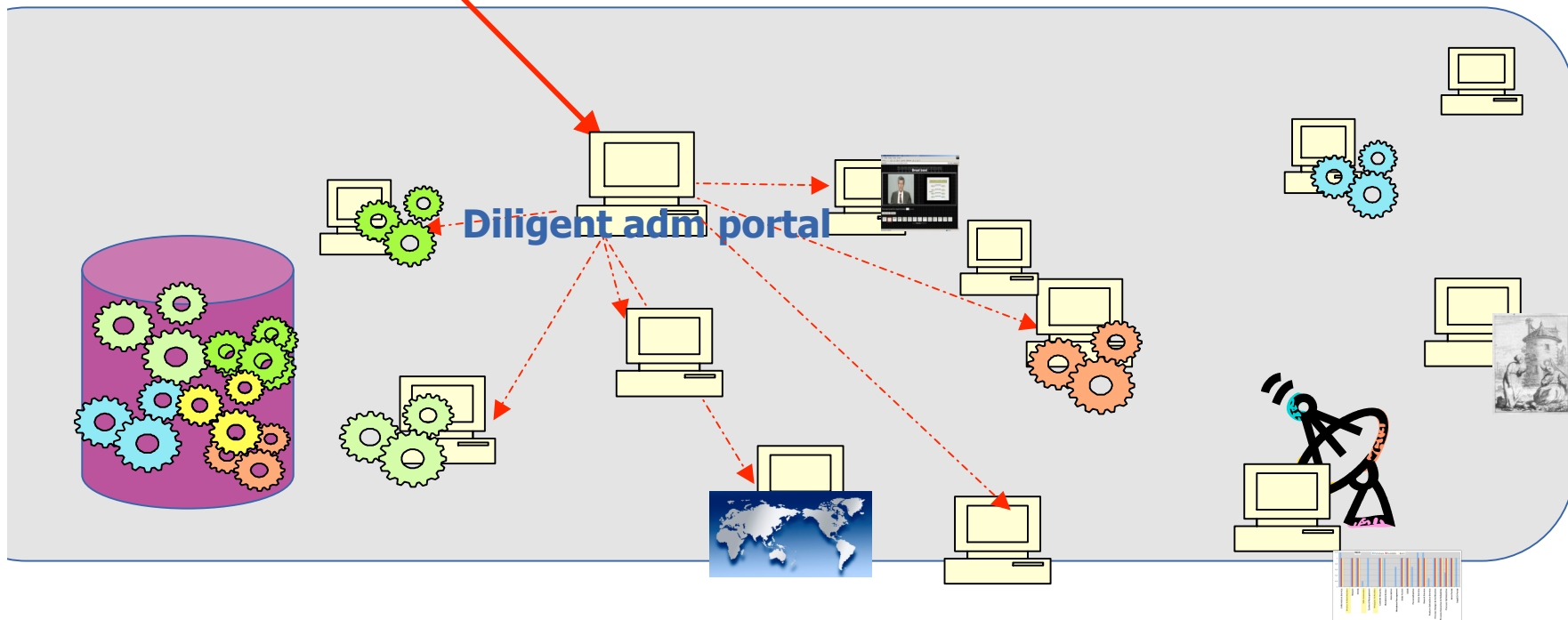


Feature extraction



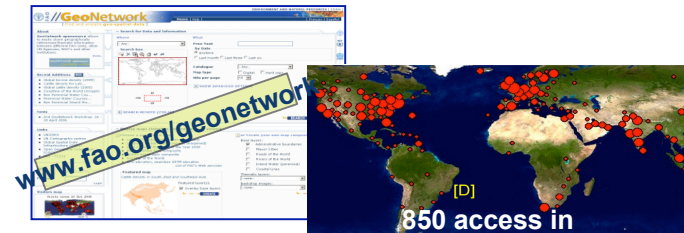
Speech recognition

DILIGENT Infrastructure



DILIGENT – research communities

- **Earth Observation:**
Production of periodic reports



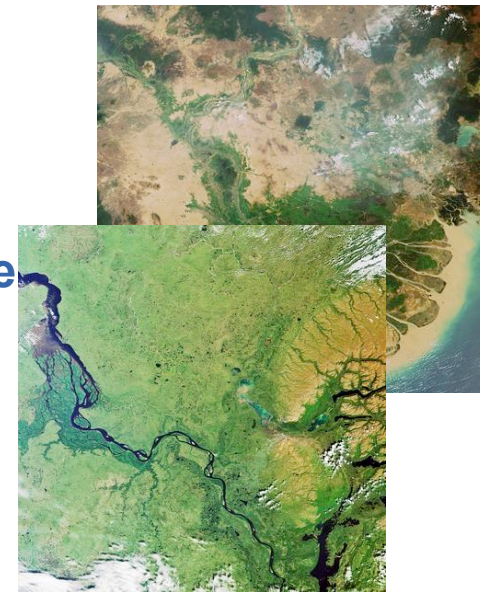
- **Humanities:**
Teaching and e-Learning



D4Science objective

The project will deploy, progressively consolidate and expand the e-Infrastructures built so far by the EGEE and DILIGENT projects so that they address the needs of two major target disciplines: **Environmental Monitoring** and **Fishery Resources Management**

As a result, thousands of scientists will obtain increasingly more facilities for creating **Virtual Research Environments** based on shared computation, storage, and generic service resources offered by EGEE and DILIGENT at a European level, as well as on data and domain-specific service resources offered by large international organizations, such as the **European Space Agency**, the **Food and Agriculture Organization of the United Nations**, and the **Consultative Group on International Agriculture Research**



DELOS – Reference Model for DLs



Formal and conceptual framework describing the characteristics of digital library systems by exploiting the understanding of them concretely acquired by a number of research groups active in the digital library field

<http://www.delos.info/ReferenceModel>