DILIGENT for Science and the role of standards

4th e-Infrastructure Concertation Event
Sophia Antipolis, 5th-6th December 2007

Jessica Michel
GEIE ERCIM

Consortium members

- GEIE ERCIM (FR)
- CNR-ISTI (IT)
- National and Kapodistrian Univ. of Athens (GR)
- CERN (CH)
- Engineering Ingegneria Informatica SpA (IT)
- University of Strathclyde (UK)
- Universität Basel (CH)
- European Space Agency (FR)
- The Food and Agriculture Organization of the United Nations (IT)
- International Center for Living Aquatic Resources Management (MY)
- 4D SOFT Software Development Ltd. (HU)
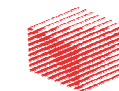
Project objectives

"*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 several new scientific communities affiliated with the broad disciplines of* **Environmental Monitoring** *and* **Fishery Resources Management**.**"**
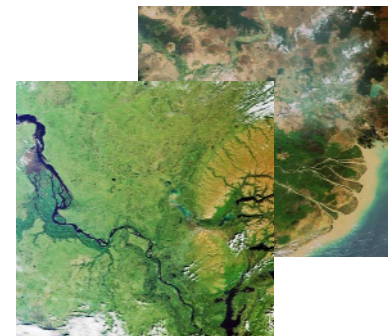
Work plan outline

- **Production-level infrastructure (First release M6)**
  - Bring into production the D4Science testbed infrastructure
  - Manage and upgrade it by periodically deploying new community-specific resources as well as more consolidated and extended releases of the services in the underlying system

- **Virtual Research Environments and specialized applications services (First releases M6-M12)**
  - Build VREs and services that are necessary to realize the scenarios established by the scientific communities concerned
  - Adapt community-specific data and service resources to exploit the e-Infrastructure capabilities

- **Consolidation and extension of the *gCube* system (Continuous release process starting from M5)**
  - Coding-for-performance
  - Empowering of the VREs definition and support; security framework; monitoring functionality; and information organisation, retrieval and presentation facilities
  - Consolidation of the process management and report generation mechanisms

- **Scientific community cooperation (As of M1)**
  - Enhance the cooperation between Fishery Resource Management and Environmental Monitoring
  - Create a framework and a process for further cooperation of this type across other related communities

e-infrastructure

Standards related work
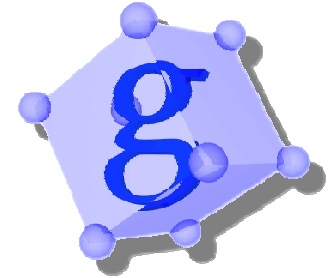
- **Design and development of the D4Science underlying system, *gCube*, strongly based on the use of standards**

  - Globus Toolkit 4 Java WS-Core implementation of the following specifications:

    - WS-Notification, WS-Addressing
    - WS-ResourceProperties (WSRF-RP), WS-ResourceLifetime (WSRF-RL), WS-BaseFaults (WSRF-BF), WS-ServiceGroup (WSRF-SG)

  - *gCube* portal is based on portlets technology using GWT and JSR168. Built on GridSphere portal engine

- **Being a pioneer application of these standards *gCube* has also contributed in the past by identifying problems and forging new solutions**

  - Data transport mechanism (gResultSet)

    - Overcome WS restrictions towards performance
    - Standardize information exchange among WS

  - Dynamic service deployment
  - Fully transparent exploitation of the GSI secure conversation (through delegation and renewal)
  - First integrated use of GWT and JSR168

- **Several application domain standards will also be used**

e-infrastructure