DILIGENT

A **DI**gital **L**ibrary **I**nfrastructure on **G**rid **EN**abled **T**echnology

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Outline

- Partners
- Objectives and motivations
- High level technical description
- Project timing

Partners

- Consiglio Nazionale delle Ricerche – ISTI (Italy, Scientific Co-ordinator)
- European Research Consortium for Informatics and Mathematics (France, Administrative Co-ordinator)

- University of Athens (Greece)
- Swiss Federal Institute of Technology Zurich -ETH Zurich (Switzerland)
- Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V. – IPSI (Germany)
- University for Health Informatics and Technology Tyrol (Austria)
- University of Strathclyde (United Kingdom)

- Engineering Ingegneria Informatica SpA (Italy)
- Fast Search & Transfer ASA (Norway)
- 4D SOFT Software Development Ltd. (Hungary)

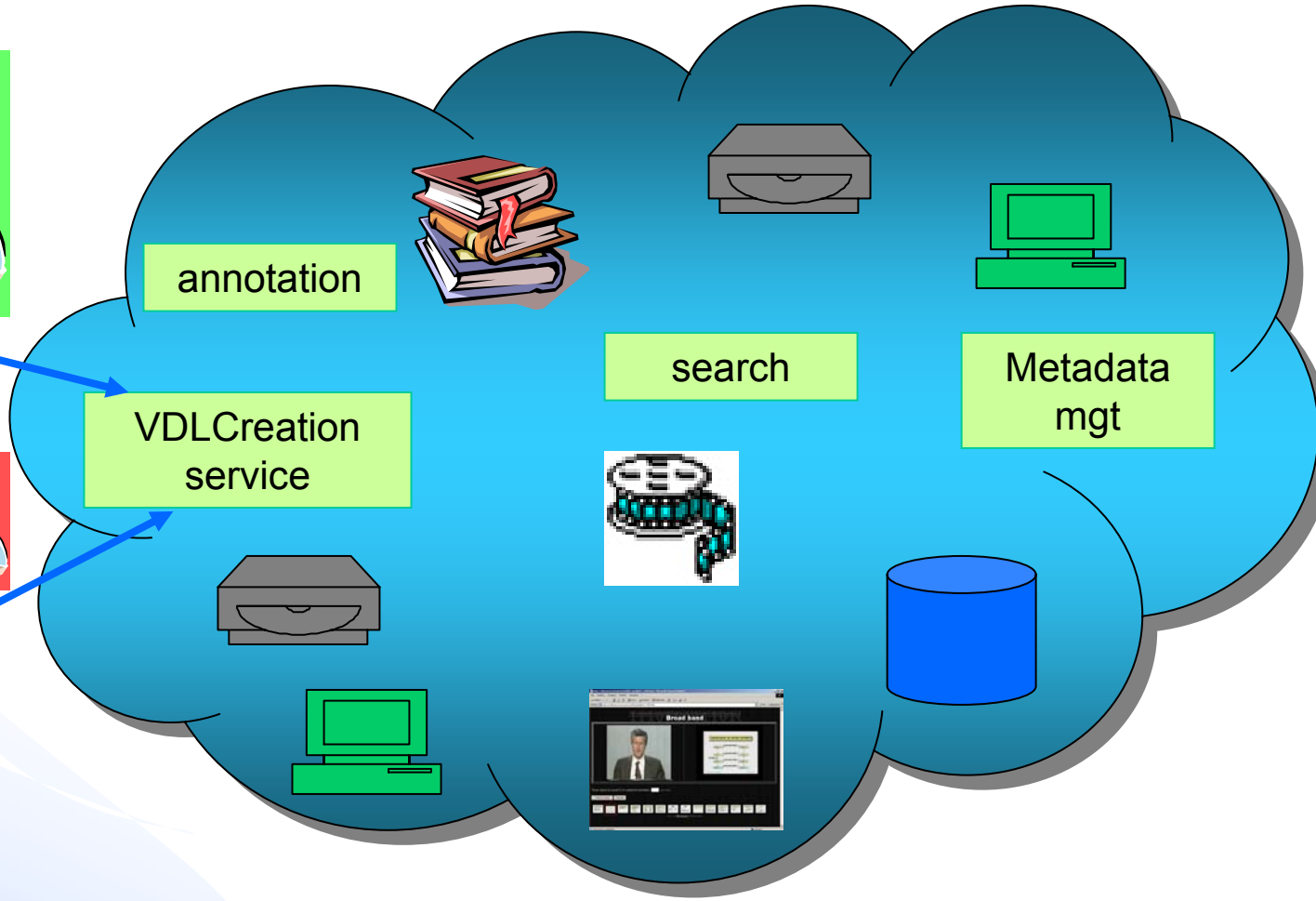
- European Organization for Nuclear Research (Switzerland)

- European Space Agency – ESRIN (Italy)
- Scuola Normale Superiore (Italy)
- RAI Radio Televisione Italiana (Italy)

Objective

Create an advanced Grid-based **Digital Library Infrastructure** that will allow members of dynamic virtual organizations to create transient virtual digital libraries based on shared computational, storage, multimedia, multi-type content and application resources.

DILIGENT Framework



Motivations

The demand for DLs has recently grown considerably

- DLs are perceived as a necessary instrument to support communication and collaboration among the members of communities of interest
- Many application domains require DL services, e.g. e-Health, e-Learning, e-Government
- The organizations that demand a DL are often small, distributed, and dynamic; they want to use DLs to support temporary activities such as courses, exhibitions, projects, etc.

The current DL development model

- The construction and management of a DL requires high investments and specialized personnel
- Years are spent in designing and setting up a DL
- Content production is very expensive
- Multimedia handling is very limited since it requires high computational resources
- The systems lack interoperability and the services provided are difficult to reuse

Current trends

- **Digital Library Management Systems**
  DLMSs implement all the key services and management features required to support the entire spectrum of DL functionality

- **Sharing of Content and Service Resources – Virtual DLs**
  VDLs provide customised views of the underlying shared resources

- **DLs as components of more generic shared infrastructures**
  These infrastructures serve a multitude of application areas

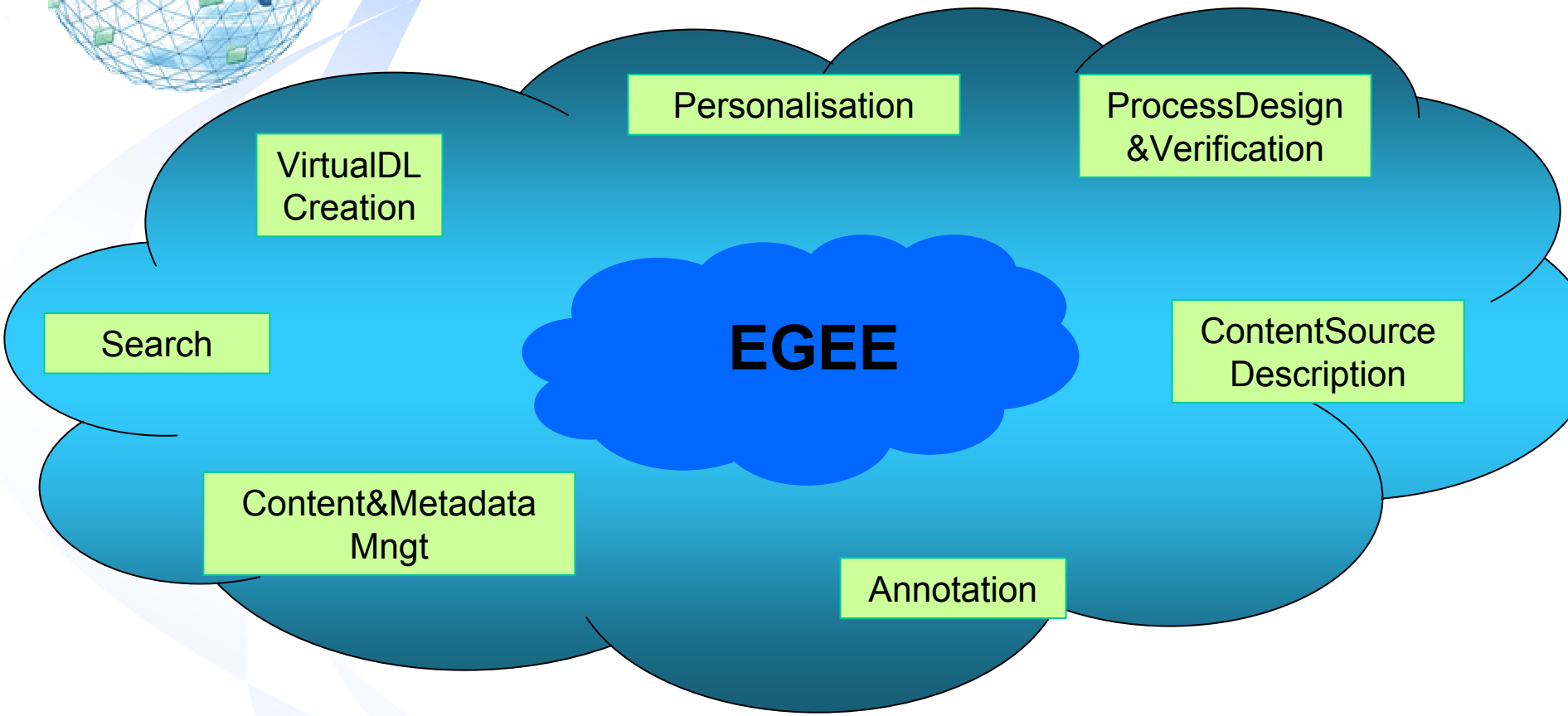
Which architectural framework?

The realisation of this new vision requires a suitable architectural framework

The DILIGENT reply:

The Grid

Technical solution

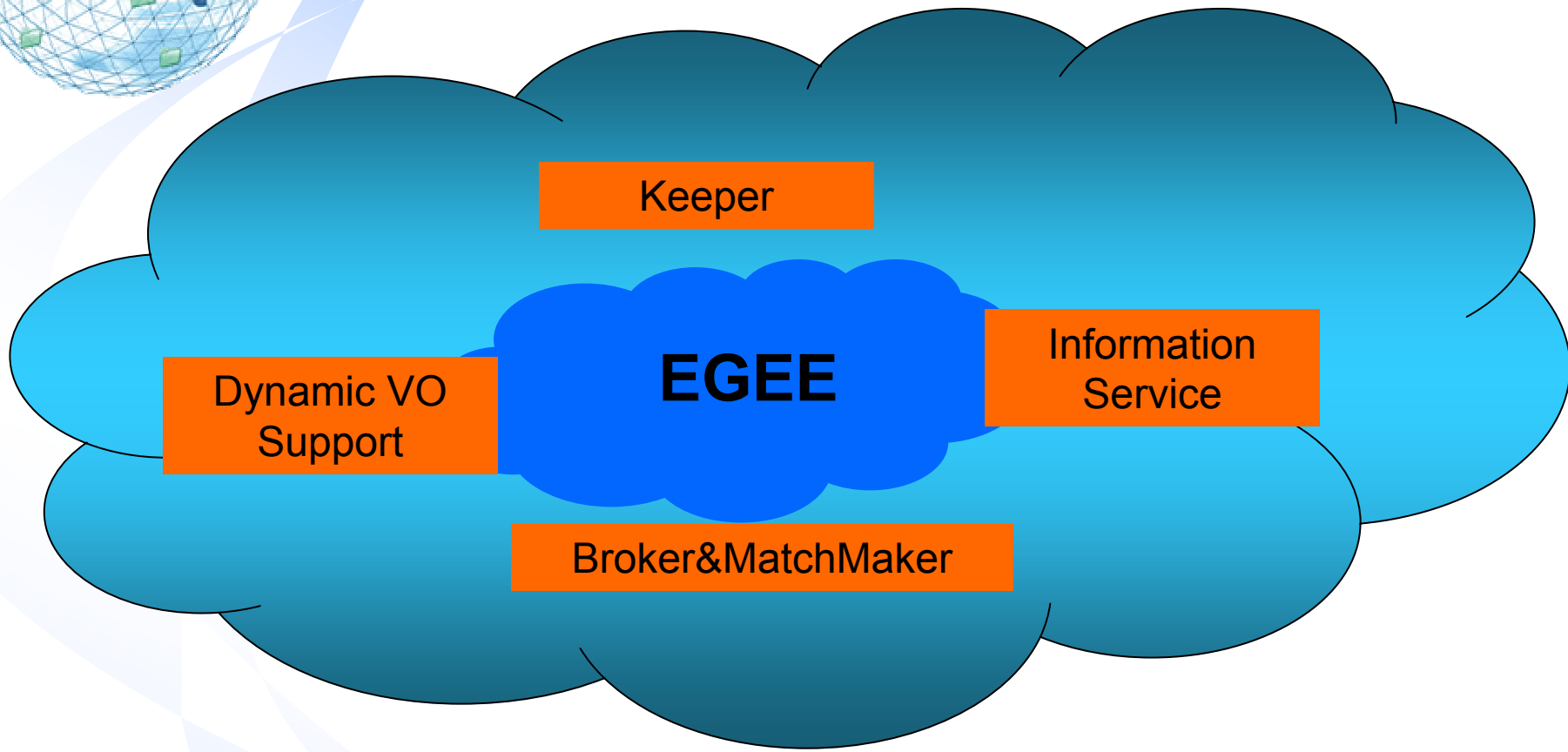


DILIGENT will be built by integrating Digital Library services on the infrastructure developed by EGEE

VDLs specific needs

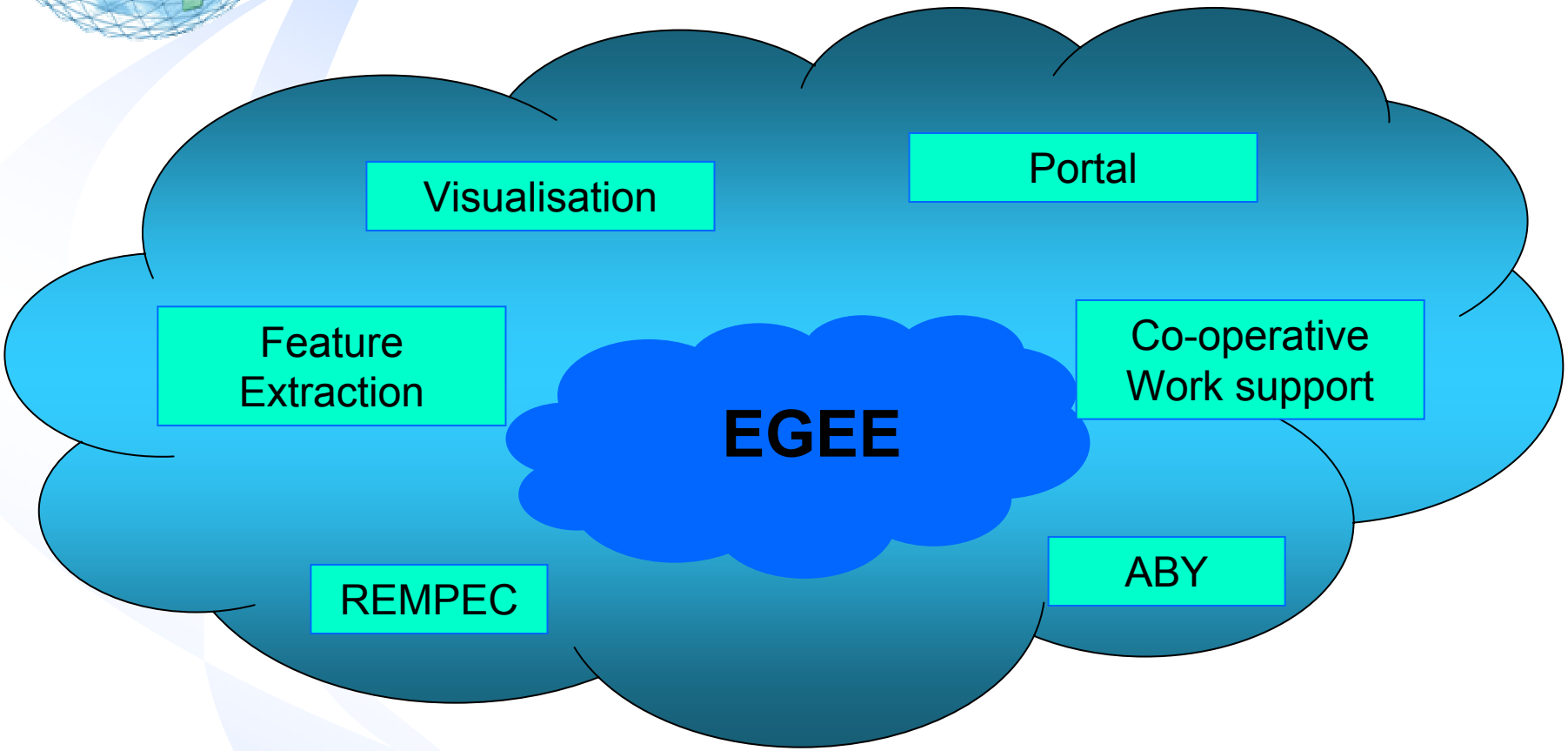
1. Information objects may be built by aggregating content physically stored on different distributed sources
2. The DL functionality is implemented by a federation of co-operating services
3. The selection of the VDL resources depends on the user definition criteria
4. ……

Technical Solution (cont.)



DILIGENT will enhance EGEE with the functionality needed to support the complex services interactions required to build, operate and maintain transient virtual digital libraries

Technical Solution (cont.)



Application services that provide user communities' specific funcionality will be added

DILIGENT validation scenarios

Implementation of Environmental Convention Scenario

- **European Space Agency**
- The Italian Ministry of Environment and selected European coast-guard offices
- REMPEC the Regional Marine Pollution Emergency Response Centre (Malta)
- UNESCO IOC (Intergovernmental Ocean Committee) (Paris)
- ITOPF, International Tanker Owners Pollution Fed. Ltd. and MOIG, Mediterranean Oil Industry Group
- ICRAM, Italian Central Institute for Marine Applied Research

ARTE Project

- **Scuola Normale Superiore**
- **Rai Radiotelevisione Italiana**
- Brown University – Department of Italian studies
- Centre de Recherche en Histoire des Sciences et des Techniques
- Universidade da Coruña – Research Team on Hispanic Emblematic Literature
- University of Glasgow – HATII
- Università di Pisa – Facoltà di Lettere e Filosofia – Corso di Laurea Cinema Musica e Teatro
- Studio Azzurro Produzioni

DILIGENT Observers

- National Science, technology, engineering, and mathematics education Digital Library (NSDL)
- DELOS Network of Excellence on Digital Libraries
- CoreGrid Network of Excellence on Grid
- Kettering University
- University of Cyprus - Department of Computer Science
- University of California - Alexandria DL Project
- CPO Hanser Service
- Tiroler Landeskrankenanstalten (TILAK) - Tyrolean Hospital Consortium
- Centro Sviluppo Materiali Spa
- Bielefeld University Library
- Carnegie Mellon University

Development plan

- Duration: 3 years
- Total effort: 1024 p/m
- Expected commencement date: September 2004

- First prototype (end of the 2nd year)
  - Deployed on a restricted controlled infrastructure based on the EGEE middleware
  - Used to the demonstrate the feasibility of the DL infrastructure

- Final infrastructure (end of the 3rd year)
  - Deployed on the product EGEE infrastructure

http://www.diligentproject.org

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