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Enabling Grids for E-sciencE

DILIGENT

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Information Society
and Media

"Laying the foundations for next generation collaboration and knowledge management environments through the realisation of on-demand Digital Libraries over Grid enabled infrastructures"

DILIGENT : A DIgital Library Infrastructure on Grid ENabled Technology

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- **European Commission Contribution: €6,300,000.**

- **Project Start: 1st Sept '04**

- **Duration: 36 months.**

- **Partners: ERCIM (FR), CNR-ISTI (IT), University of Athens (GR), ETHZ* (SW), Fraunhofer– IPSI (DE), UMIT (AU), CERN (SW), Engineering S.A. (IT), University of Strathclyde (GB), FAST S.A. (NO), ESA (IT), SNS (IT), 4D Soft (HU), RAI (IT).**

- **Administrative and Financial Coordinator: ERCIM.**

- **Technical and Scientific Coordinator: CNR-ISTI.**

- **Status:**
  - System Detailed Design and Implementation.
  - Prototype to be delivered by Sept '06.

* ETHZ departed from the project during the 1st year passing its allocated effort over to UMIT.

- **The DILIGENT project will produce a platform that will facilitate the creation and operation of on-demand, transient Digital Libraries that will exploit the high computational and storage capabilities of the Grid infrastructure in order to allow complex and time consuming information retrieval operations.**

- **The platform will be based on the middleware released by EGEE project, namely to be gLite.**

- **The Service Oriented Architecture paradigm will be the driving concept of system design and implementation.**

- **The project will demonstrate its results through two thematically independent scenarios :**

  - ImpECt (European Space Agency).

  - ARTE (Scuola Normale Superiore & RAI) .

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3 Logical Layers

- Collective
- Digital Library
- Application Specific

5 Functional groups:

- DL Creation and Management
- Process Management
- Content & Metadata Management
- Index and Search
- User Community Applications

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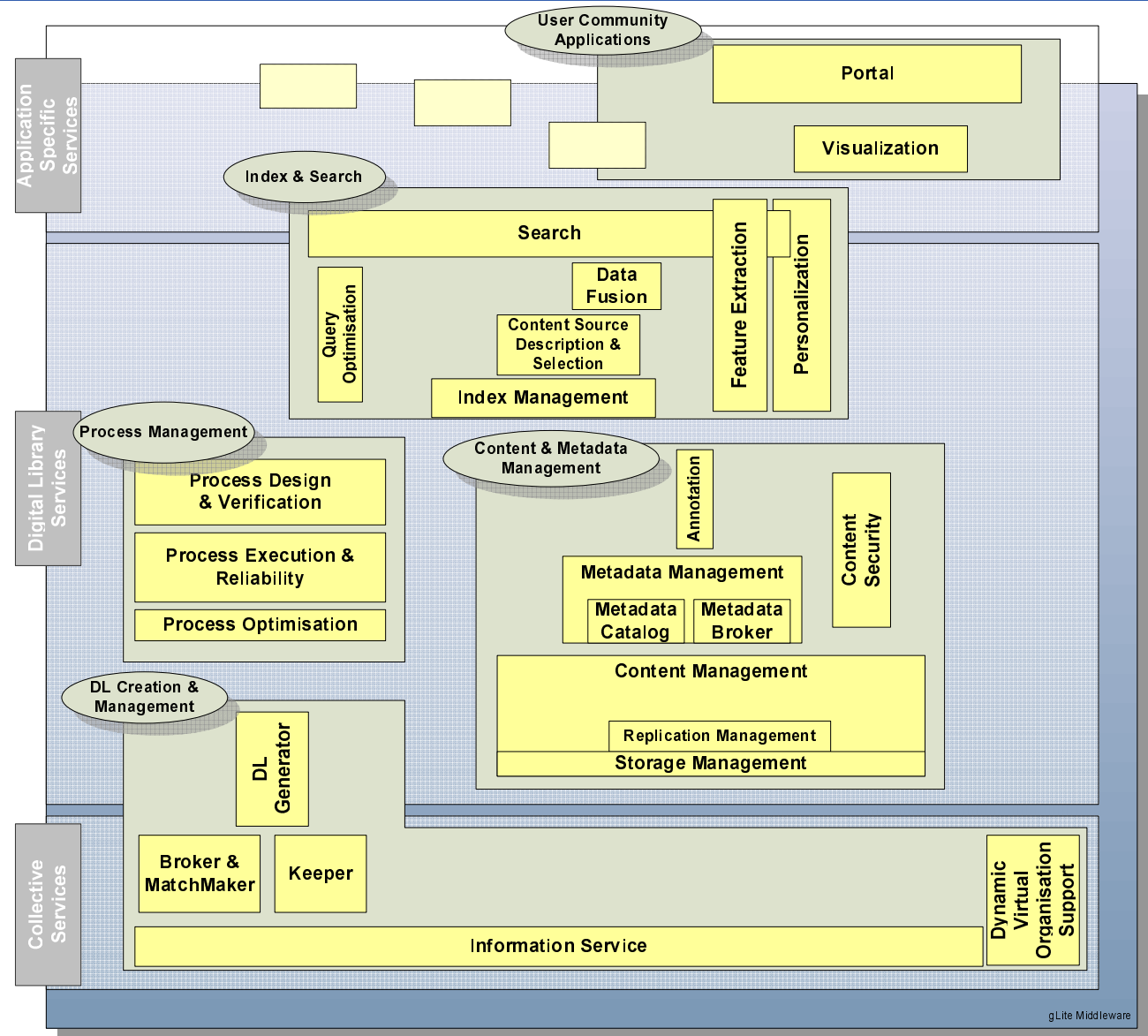
- **DL Creation and Management**
  - Provides facilities for dynamic Digital Library creation, Resource Management and VO support.

- **Process Management**
  - Provides a reliable process execution engine.

- **Content & Metadata Management**
  - Handles Digital Library content and associated metadata.

- **Index & Search**
  - Provides an engine for efficient, hi-quality, personalised information retrieval.

- **User community applications**
  - Offers user-scenario specific applications to demonstrate the use and performance of the platform.

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- **Digital Library (DL) creation, hosting and management.**
- **Dynamic resource reallocation and shared usage optimisation.**
- **Security integration through virtual organisation and virtual community support.**
- **Distributed / replicated content and metadata management, with annotations and content protection.**
- **Complex process design, verification, optimisation and execution.**
- **Fielded and content (full text & similarity) based search support.**
- **EGEE / gLite based**

- **Infrastructure**
  - Testing & development infrastructure:
    - 6 sites / all services : UoA, CNR-ISTI, Engineering, UMIT , Fraunhofer-IPSI, 4D Soft.
    - > 45CPUs, >40GB RAM, >3.5TB HDD.
    - Currently v1.4 of gLite
  - Production infrastructure:
    - (to be announced)
- **EGEE interaction**
  - Technical interactions (meetings, tutorials, mailing lists, training)
  - Feedback to EGEE:
    - gLite bugs submission
    - Requirements
  - Access to infrastructure

- **Public web site:**
  - http://www.diligentproject.org/

- **Greek Contact Points:**
  - George Kakaletris (gkakas@di.uoa.gr) - Primary UoA contact.
  - Yannis Ioannidis (yannis@di.uoa.gr) - Scientific advisor.

- **Global contact points**
  - Donatella Castelli (donatella.castelli@isti.cnr.it) - Scientific Coordinator.

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Supplementary Slides

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- ## Collective Layer

  - Enhances existing Grid collective services with the functionalities required to support the complex services interactions assumed by the Digital Library Layer.

- ## Digital Library Layer

  - Covers the fundamental functionalities such as submission, indexing and discovery of mixed-media objects, and management and processing of these objects through annotation, composition, and cooperative editing.

- ## Application Specific Layer

  - Produces specifications, APIs, and SDKs to enable third party providers to migrate their data or functional components to the DILIGENT framework.