



A Digital Library Infrastructure
on Grid ENabled Technology

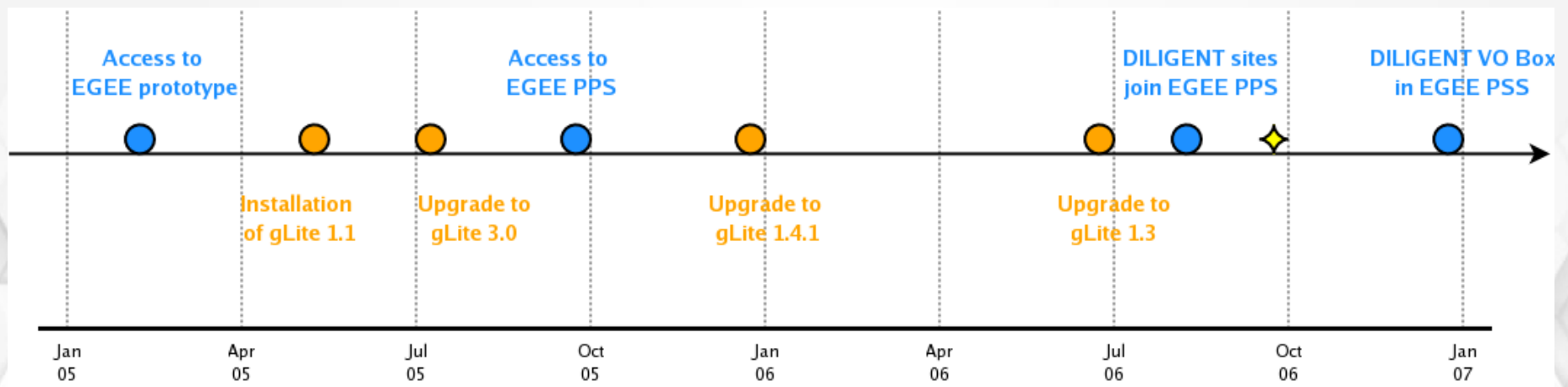
DILIGENT Prototype Status and Infrastructures

Pasquale Pagano - CNR-ISTI, Pisa
Pedro Andrade - CERN, Geneva

- Introduction
- Infrastructures
- Release plan
- gLite-based services

- DILIGENT aim is to provide a domain generic Digital Library grid-based infrastructure by enhancing existing Grid services with the functionality needed to support the complex services interactions required to build, operate and maintain transient virtual DLs
- DILIGENT decided to adopt the EGEE middleware as the grid middleware solution and several DILIGENT services are currently exploiting the grid capabilities offered by gLite
- Most of the DILIGENT core services are now implemented and the first release will be available to the DILIGENT user communities in Nov 06
- The usage of a grid infrastructure increases significantly the DILIGENT computing power and storage capacity. Currently DILIGENT is participating to the EGEE PPS infrastructure

- DILIGENT maintains two independent gLite infrastructures:
 - ◆ Development infrastructure (5 sites, 25 users, 40 CPU, 3,2 TB)
 - ◆ Testing infrastructure (3 sites, 14 users, 6 CPUs, 0,5 TB)
- DILIGENT participates in EGEE PPS
 - ◆ 2 DILIGENT sites (2 sites, 30 CPUs, 3,4 TB)



Infrastructures (EGEE PPS)

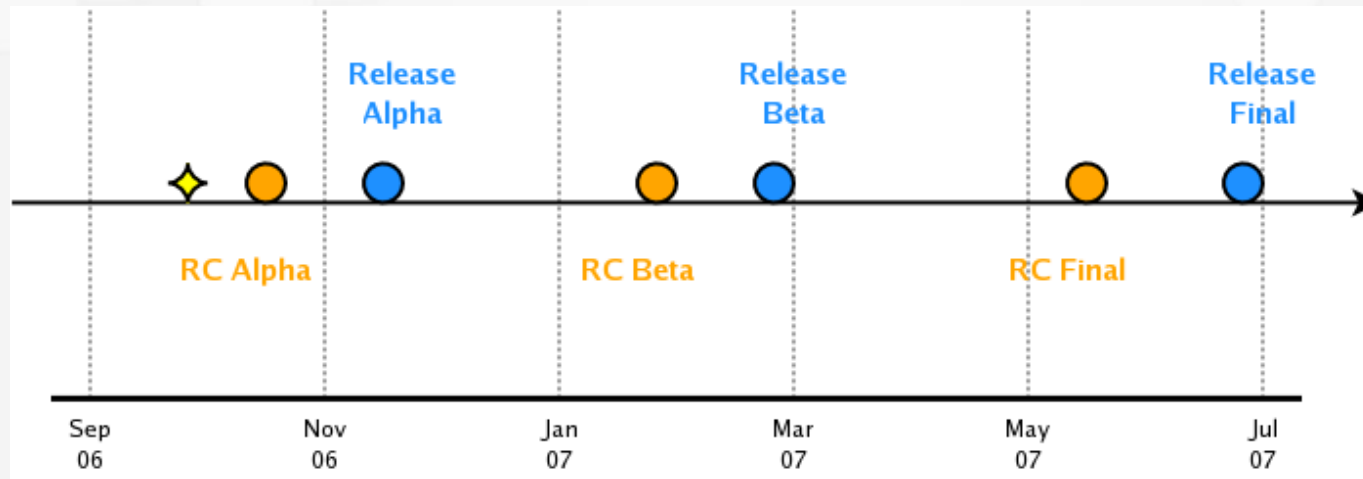


- 2 DILIGENT sites certified by EGEE and part of EGEE PPS

Goals:

- Execute and test the DILIGENT user scenarios experimentations in a "production-like" environment
- Allow EGEE to understand the DILIGENT requirements

Release Plan

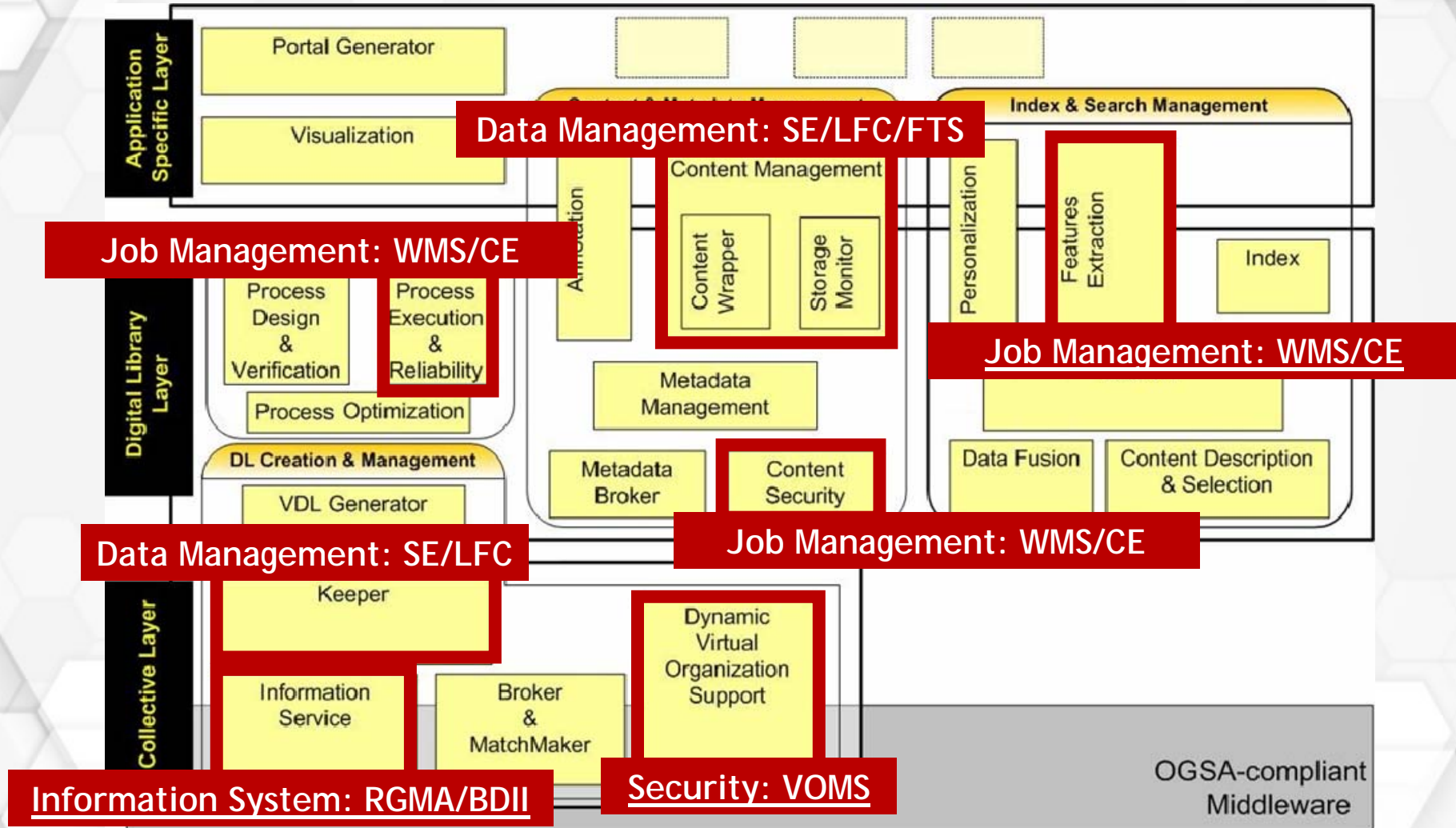


- DILIGENT releases are being built using the ETICS system
- The first DILIGENT release is planned for November 06 and will include the first basic implementation of the following gLite-based services:
 - ◆ Information system (DIS)
 - ◆ DL management (Keeper)
 - ◆ Content management

- Release Alpha will allow:
 - ◆ Dynamic creation of DLs with partially support for dynamic deployment
 - ◆ Discovery of and access to the content through:
 - ▶ Indexing
 - ▶ Description
 - ▶ Selection
 - ▶ Data fusion
 - ◆ Visual process design and execution
 - ◆ Content (video) watermarking

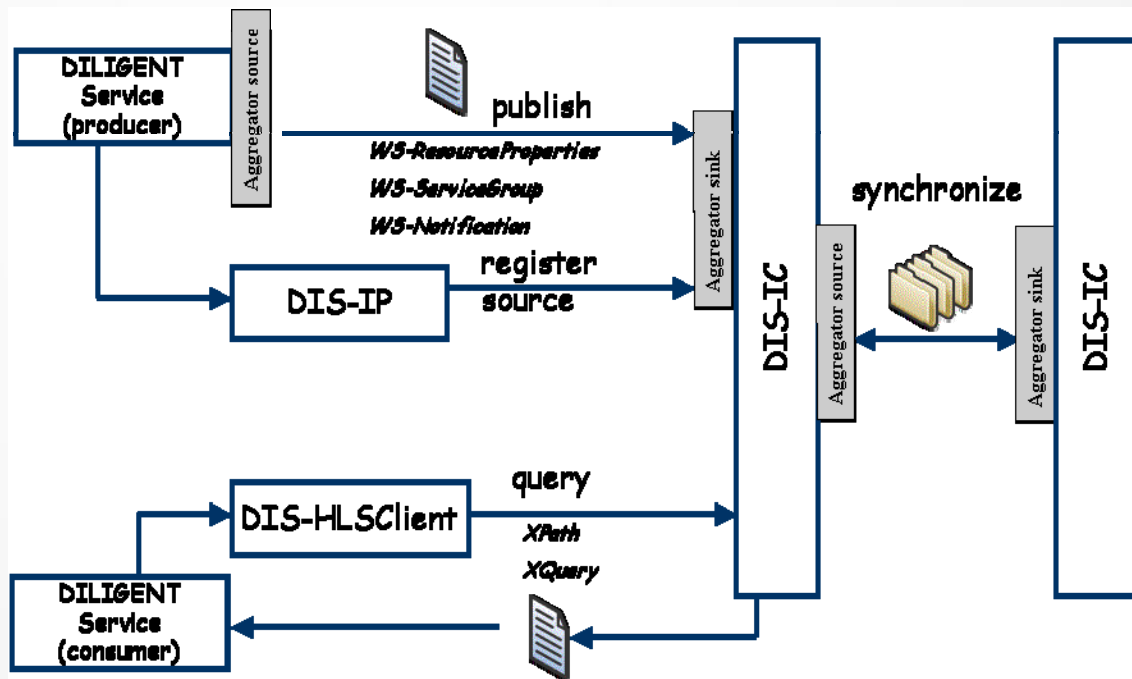
- Release Alpha will provide to the user communities:
 - ◆ An integrated framework able to exploit DILIGENT, gLite and a number of third-party services
 - ◆ Two application-specific portal prototypes tailored to engage the user communities in the experimentation phase

gLite-based Services



gLite-based Services (DIS)

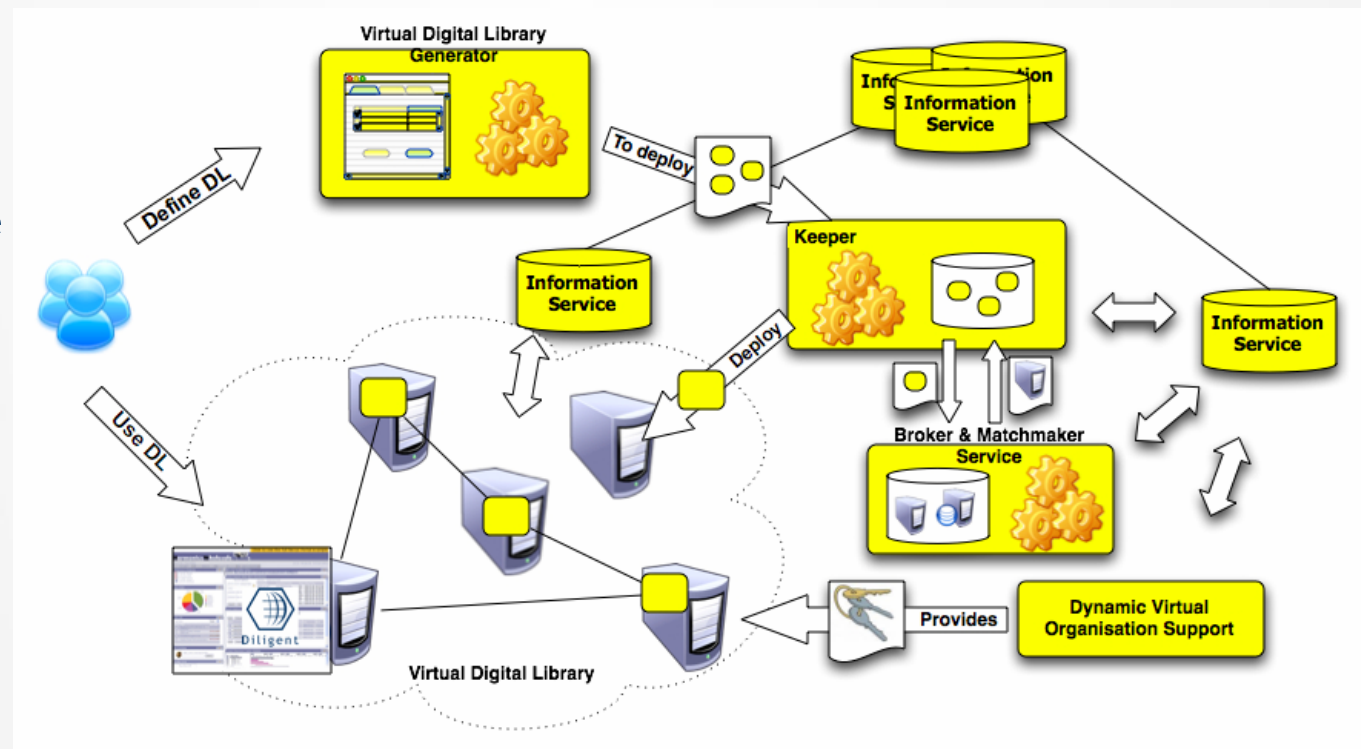
- The DILIGENT Information System (DIS) service is responsible for the **aggregation, storage and monitoring** of information about DILIGENT resources. This information is provided through query and subscription interfaces
- The DIS **exploits** gLite by aggregating information about gLite resources (SEs, CEs) from RGMA



gLite-based Services (Keeper)

- The Keeper service is responsible for the creation of DLs. This includes the **management** of the DILIGENT packages, the **selection** of the appropriate DILIGENT resources and the dynamic **deployment**, **monitoring** and **re-allocation** of DILIGENT services

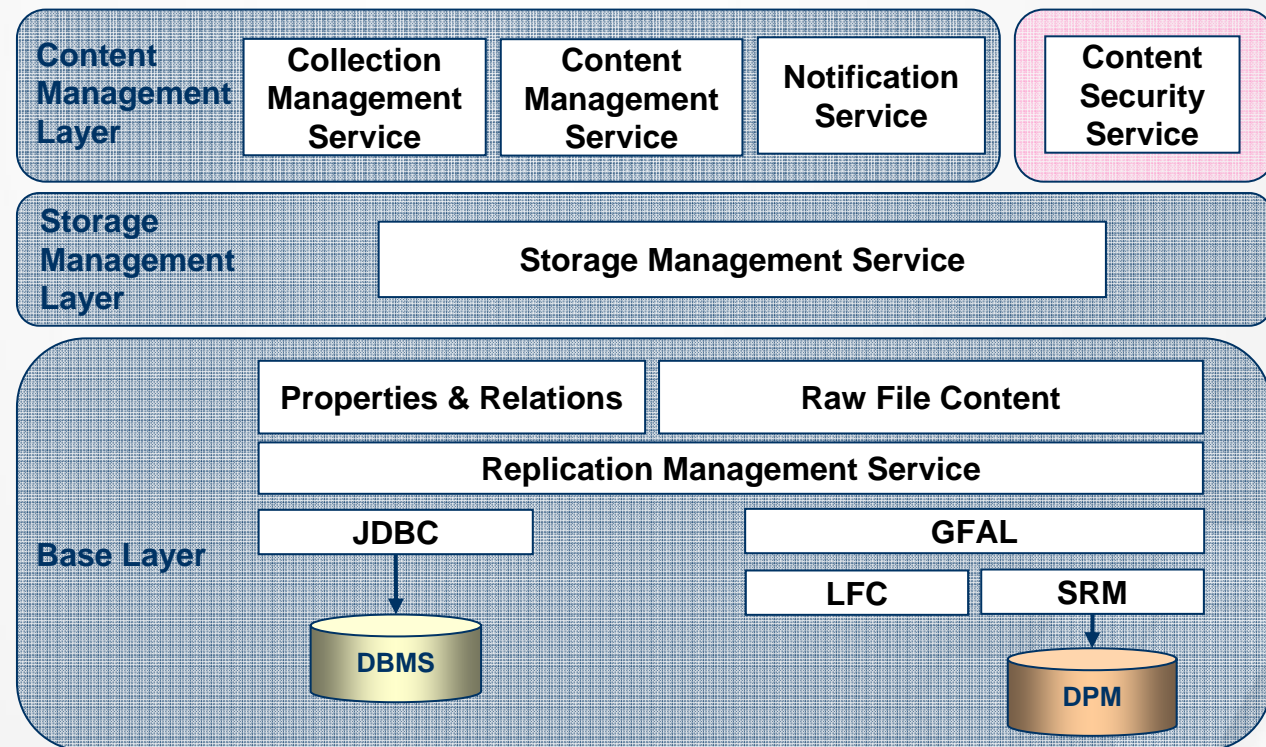
- The Keeper **exploits** gLite by storing the DILIGENT packages in gLite SE



gLite-based Services (Content Security)

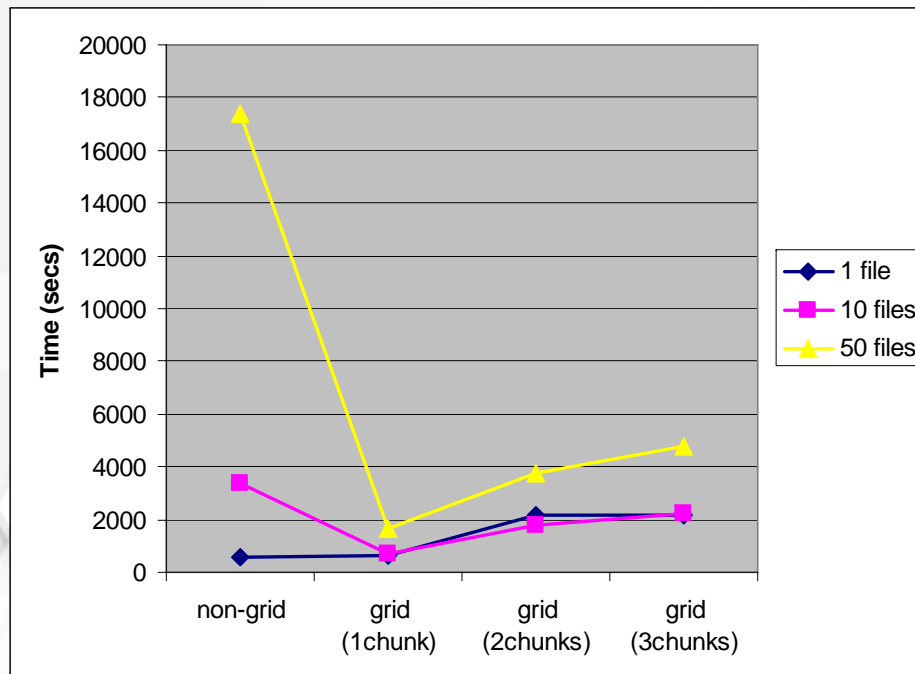
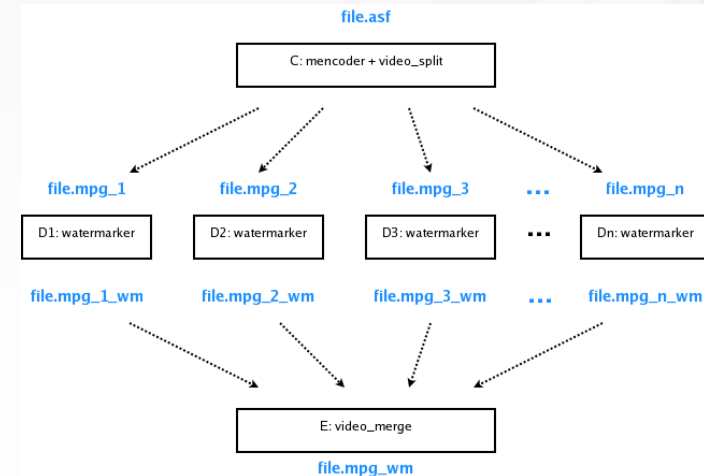
- The Content Security service deals with the specialties of **protecting** multimedia content providing authenticity, integrity and confidentiality to the DILIGENT data through the execution of grid-enabled **watermarking** algorithms for different media types

- The Content Security **exploits** gLite by executing a gridified version of the watermarking application in gLite CEs



gLite-based Services (Content Security)

- The watermarking exec. is a 3 step DAG:
 - ◆ Videoprocessor (split)
 - ◆ Watermarker
 - ◆ Videoprocessor (merge)



- Gridified execution showed the expected advantages for different use cases:
 - ◆ big number of input files
 - ◆ quickest conversion of one file

Thank you !!!

Visit our stand at the demo and poster session !!

<http://www.diligentproject.org>

pasquale.pagano@isti.cnr.it

pedro.andrade@cern.ch

Infrastructures (DILIGENT VO Box)

- The DILIGENT components can be:
 - ◆ WSRF services
 - ◆ Libraries
 - ◆ Portlets
- The DILIGENT Hosting Node Manager (HNM) is the system “core” component responsible for the deployment of the all DILIGENT components
- Main software requirement:
 - ◆ Java WS-Core 4.0.2
 - ◆ gLite specific clients (RGMA client, LCG_util, etc...)

gLite-based Services (DVOS)

- The Dynamic Virtual Organization Support (DVOS) service provides a robust and flexible security framework based on an advanced authentication and authorization model. It also offers notification support and dynamic aggregation of resources and users/groups
- The DVOS **exploits** gLite by relying in VOMS for its AuthZ service

