



Enabling Grids for E-science

## ARDA Metadata Grid Application

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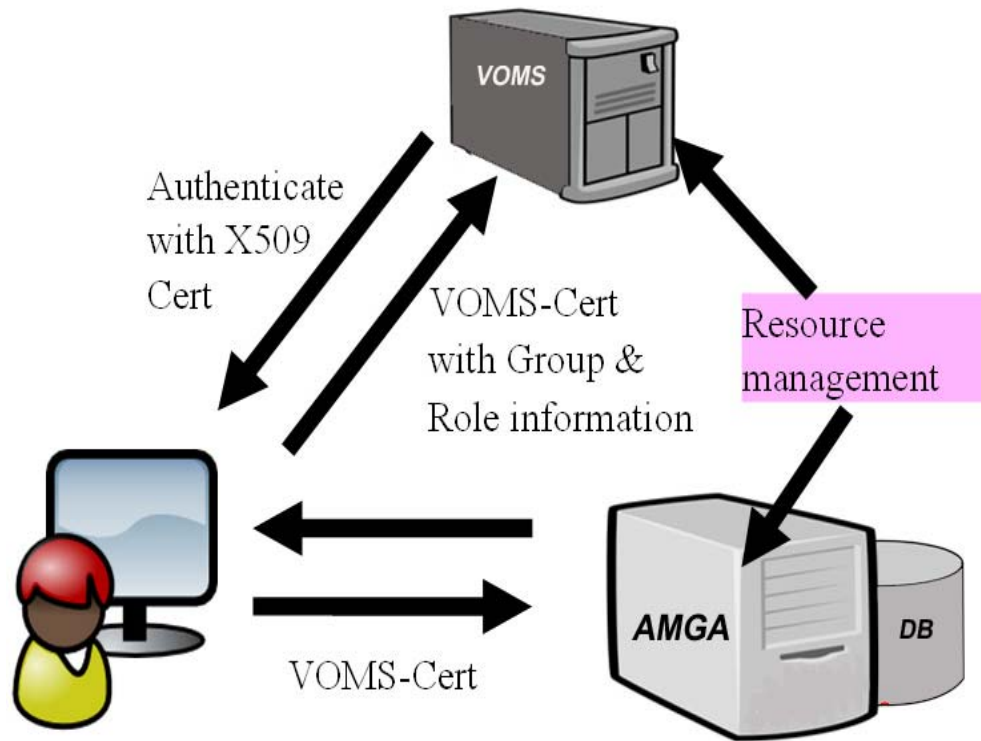
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- **Portion of slides (derived from those) prepared by:**
  - Mike Mineter, NESC
  - Charles Loomis, LAL-Orsay
  - Roberto Barbera and The GILDA team  
University of Catania and INFN
  - EGEE-II NA4 Activity Member's

- Metadata is **data about data**
- On the Grid: **information about files**
  - Describe files
  - Locate files based on their contents
- **But also simplified DB access on the Grid**
  - Many Grid applications need structured data
  - Many applications require only simple schemas
    - Can be modelled as metadata
  - Main advantage: better integration with the Grid environment
    - Metadata Service is a Grid component
    - **Grid security**
    - Hide DB heterogeneity

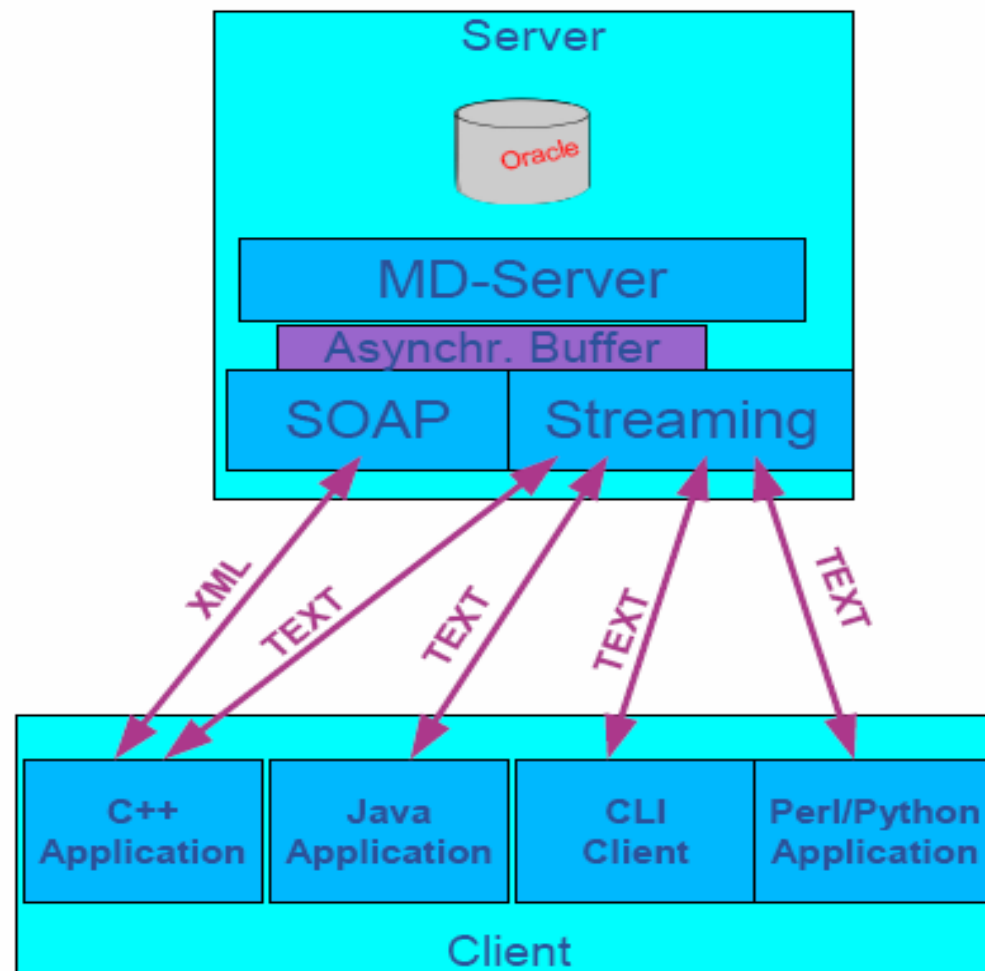
- **Dynamic Schemas**
  - Schemas can be modified at runtime by client
    - Create, delete schemas
    - Add, remove attributes
- **Metadata organised as an hierarchy**
  - Schemas can contain sub-schemas
  - Analogy to file system:
    - Schema  $\leftrightarrow$  Directory; Entry  $\leftrightarrow$  File
- **Flexible Queries**
  - SQL-like query language
  - Joins between schemas



- Side-by-Side a File Catalogue (LFC): File Metadata
- Access control to resources on the Grid is done via VOMS
- Strong security requirements:
  - patient data is sensitive
  - metadata access must be restricted to authorized users

- **AMGA Implementation:**

- SOAP and Text frontends
- Streamed Bulk Operations
- Supports single calls, sessions & connections
- SSL security with grid certs (negotiated by client)
- Own User & Group management + VOMS
- PostgreSQL, Oracle, MySQL, SQLite backends
- Works alongside LFC
- C++, Java, Perl, Python clients

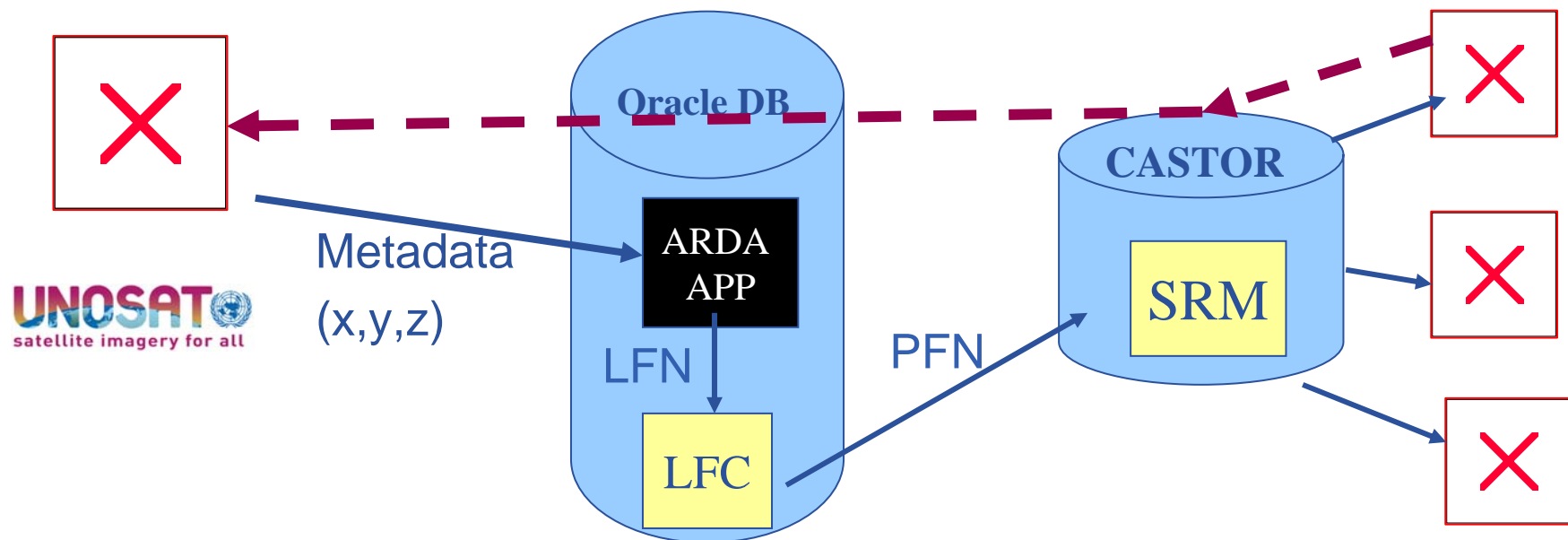


## ■ LFC Catalogue

- ➔ Mapping of LFN to PFN

## ■ UNOSAT requires

- ➔ User will give as input data certain coordinates
- ➔ As output, want the PFN for downloading





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## Questions?

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