



QUASAR-IN2P3 6 June 2013
au CC
design a CMDB system

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on behalf of cmdbgroup

dapnia
cea
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DE LA RECHERCHE
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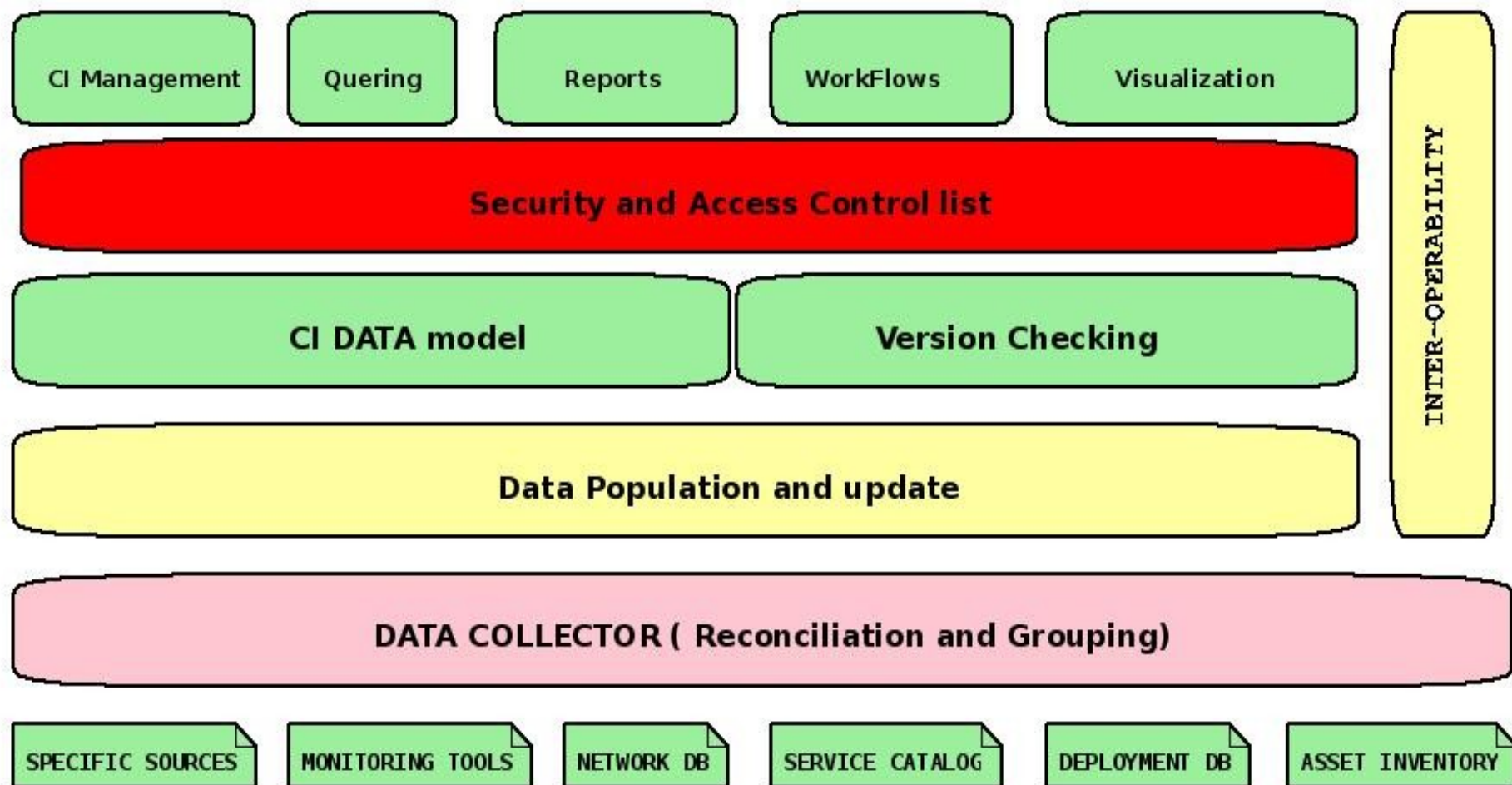
Management & Operations



The configuration management database (CMDB) as conceptual IT model which reflects the infrastructure and service structural configuration (anatomy).

- **CMDB** is containing the characteristics of each *configuration item* (CI) of an IT infrastructure and the relationships between the items.
- The **relationships** between the CIs can be any (important) logical expression which involved two CIs, evaluates to true and reflects a structural information.

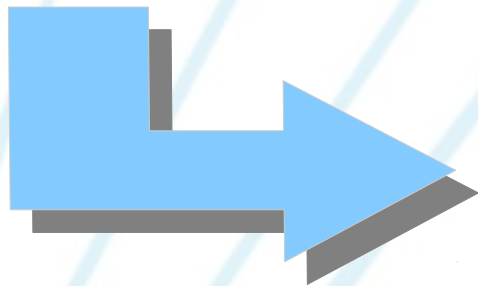
▶ CMDB open-source software structure



Targets and Goals



Provide a single repository of information and data exchange in order to support ITIL Processes



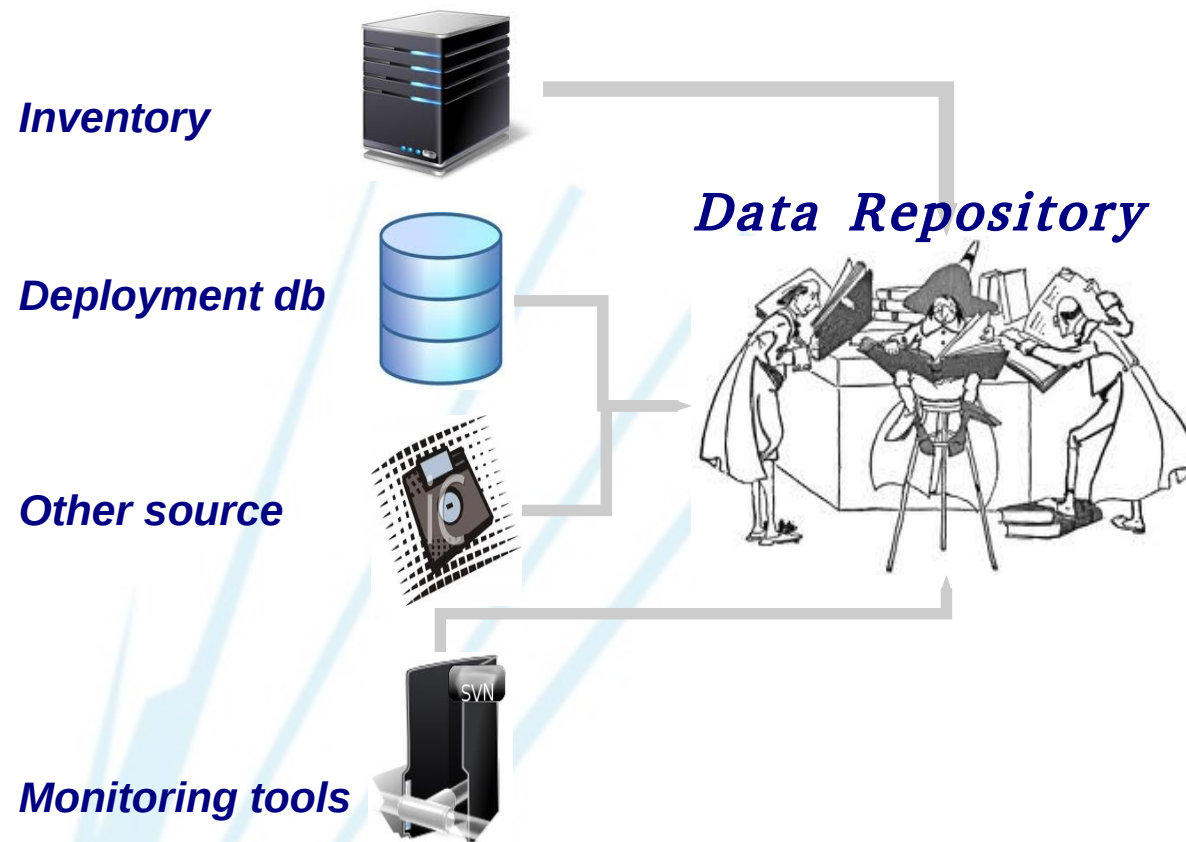
- *Supports Impact Analysis*
- *Supports Capacity Planning and Reports*
- *Define self-maintenance procedures to defeat corrupted information and data*

Define the foundation for a change management system

Basic Idea ...



Sources of Information



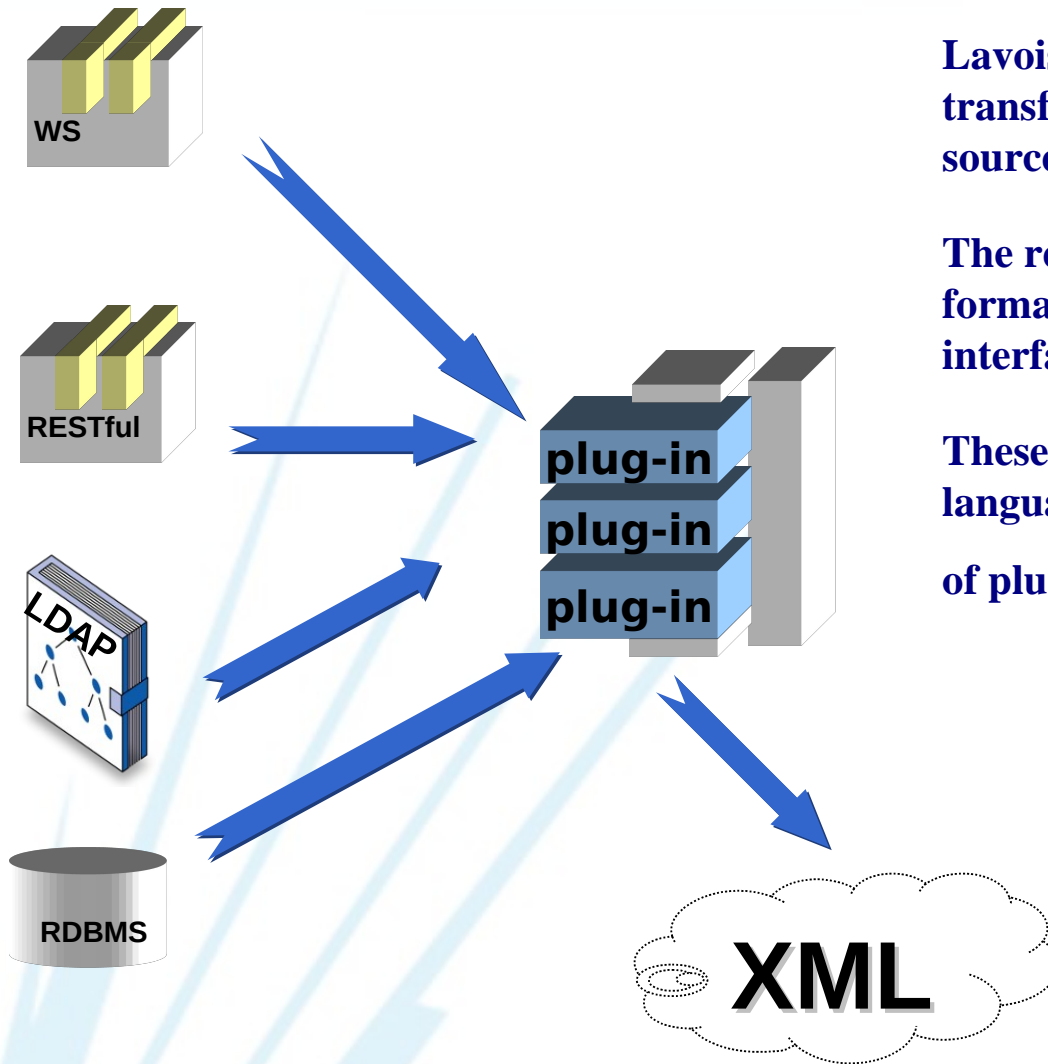
CMDB



Processes

- ✓ Incident management
- ✓ Change Management
- ✓ Capacity planning
- ✓ Impact analysis

Lavoisier 2.0



Lavoisier is a framework which enables to retrieve, transform, merge and query heterogeneous data sources.

The resulting data is exposed as views in standard formats (xml, csv, json) through a RESTfull web service interface.

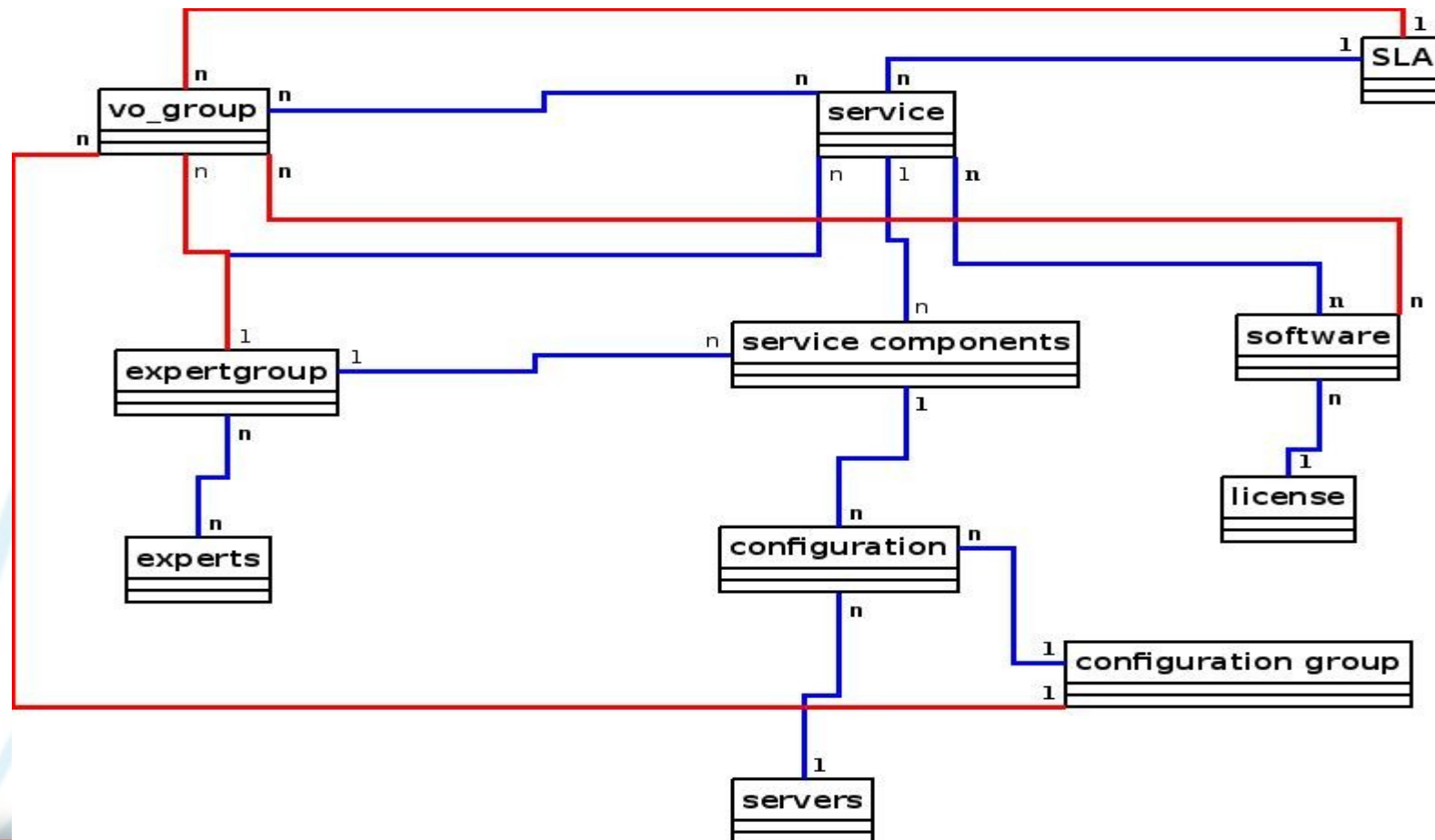
Theses XML views are configured with the Lavoisier language (based on XML and Xpath) by defining chains of plugins.

Developed at IN2P3-CC for the operation portal of the project EGEE and now for the EGI, which aggregates data from many remote data sources.

Model example



- Data model is driven by the processes
- Hi-part (Logical CI e.g. services, service components)

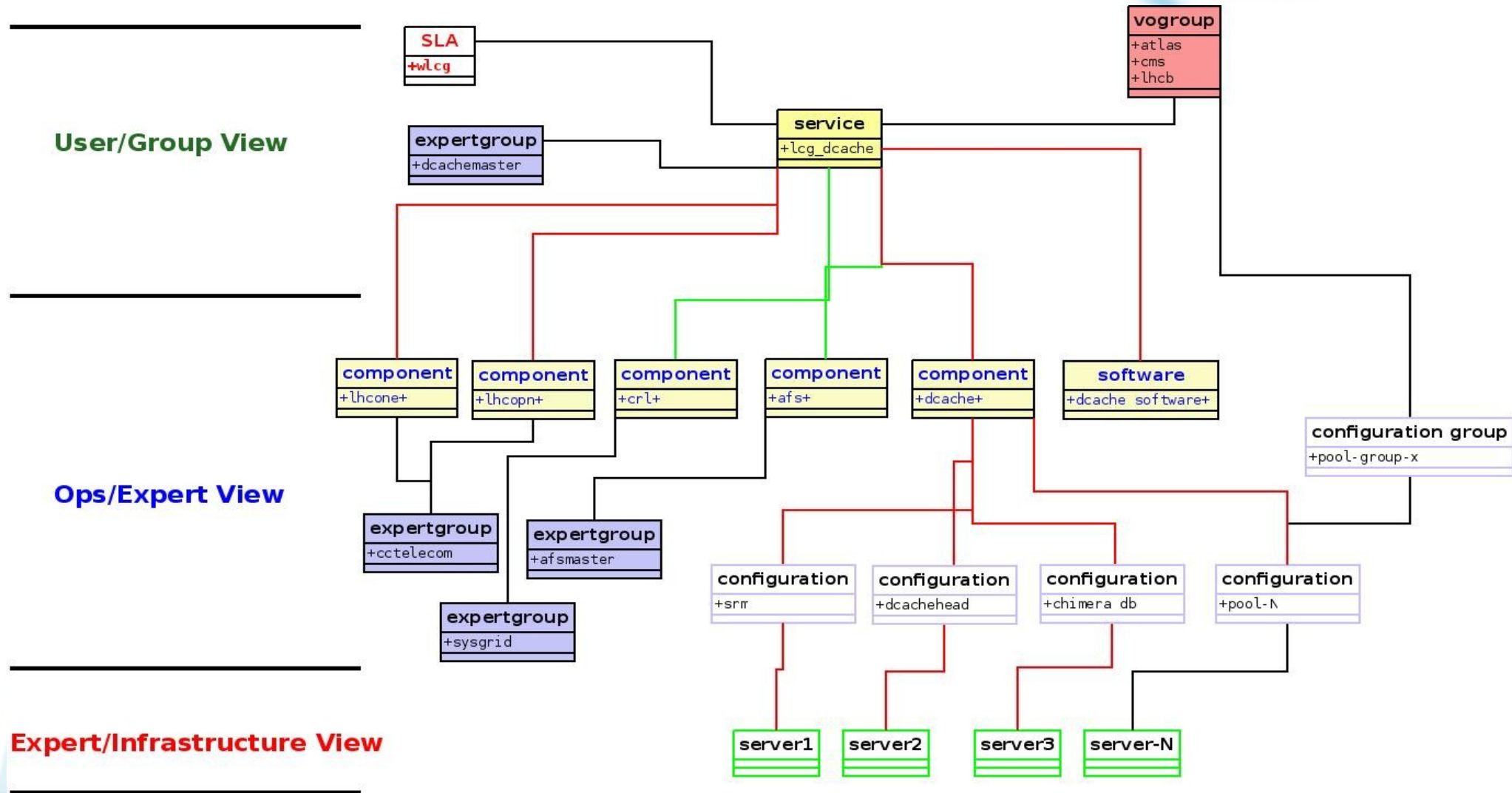


Example (dCache)

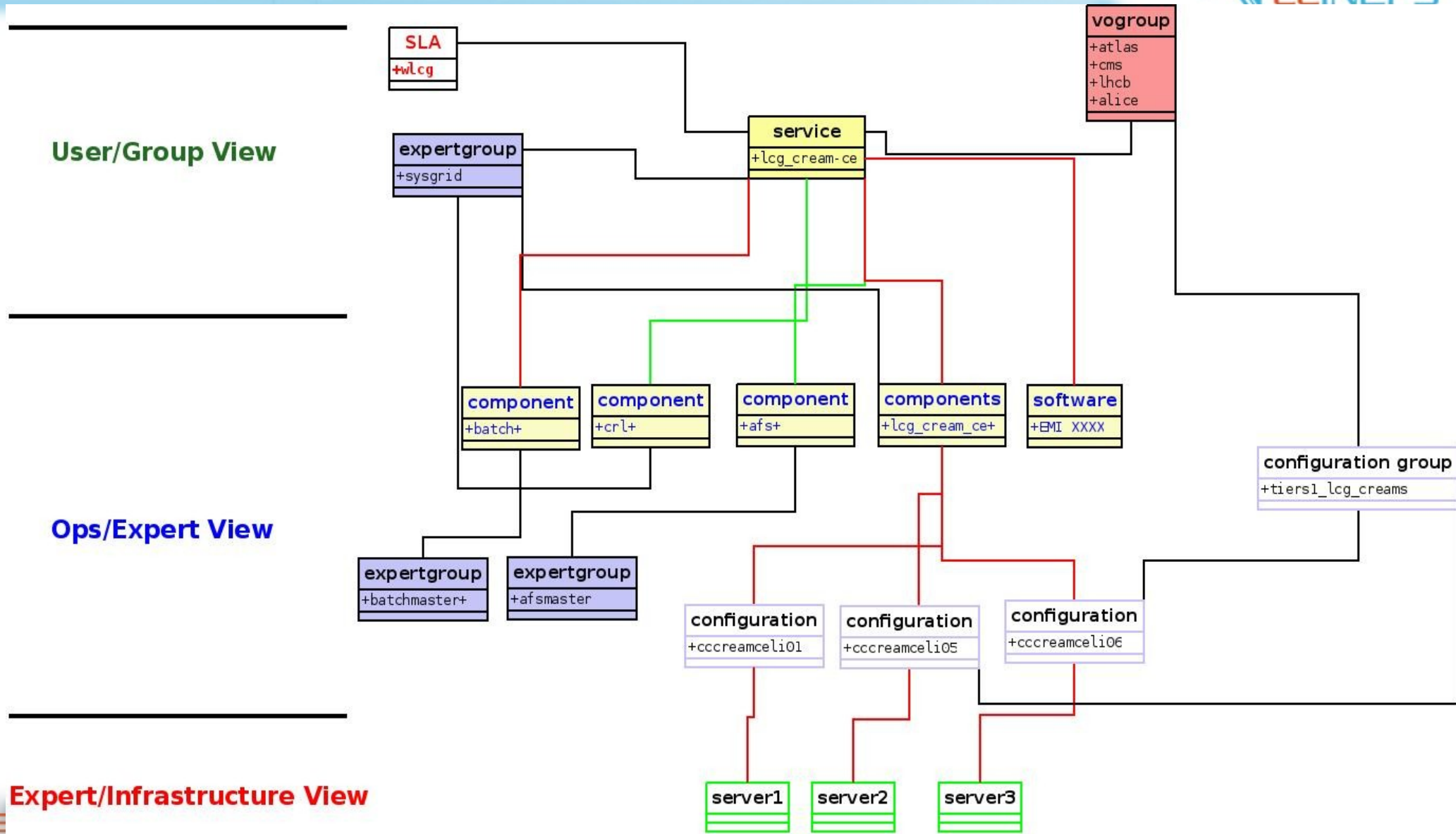


- **dCache is a distributed storage solution**
 - Variety of components and roles
 - ~200 hosts
 - Rich lifecycle (e.g. logistics part, incidents, maintenance)
 - Multi functional support (network, sysunix, middle ware, operations, dedicated support)
 - Service slices is an open issue ?

A cluster service : dcache



A grid service: cream-ce



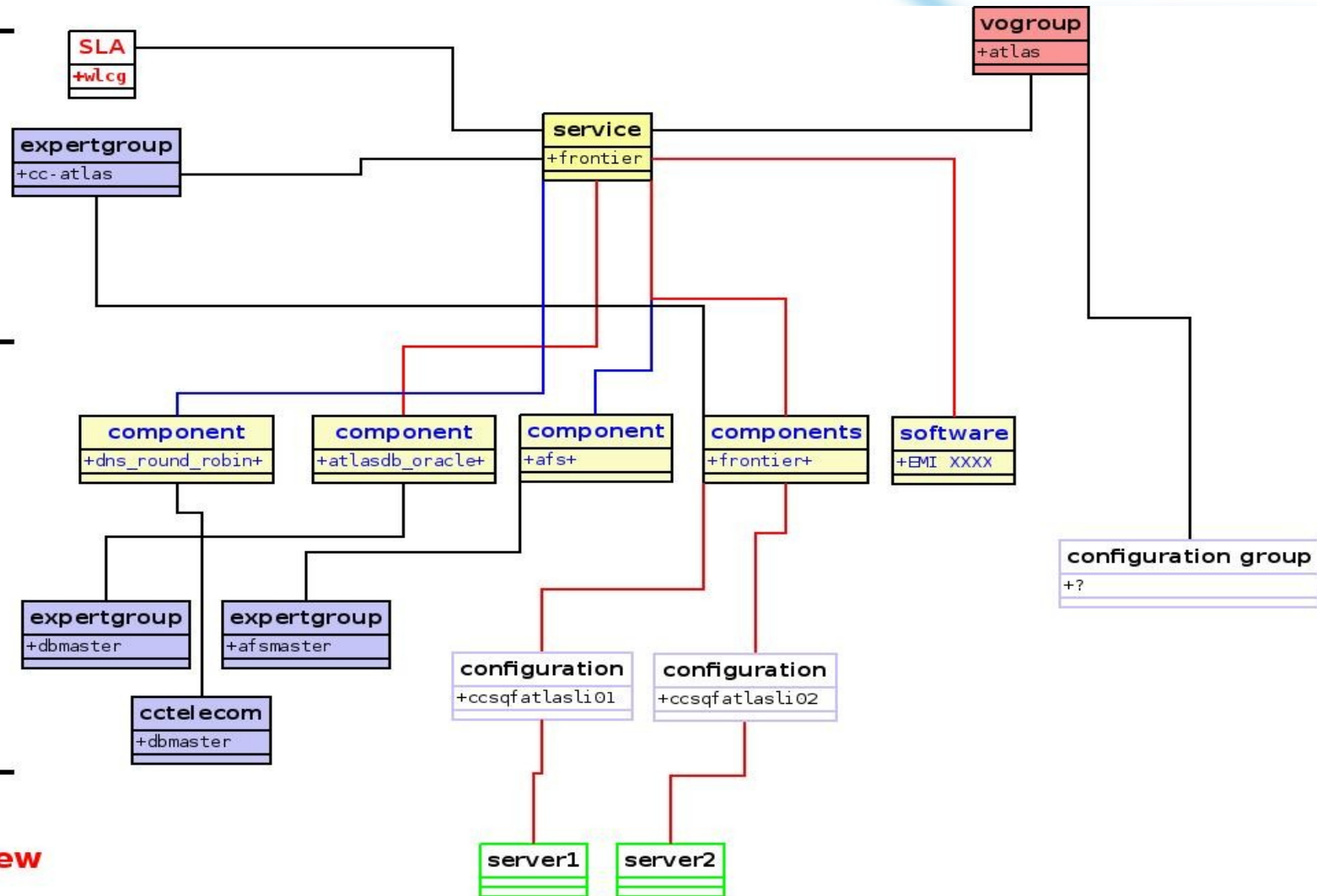
a Vo service: Frontier



User/Group View

Ops/Expert View

Expert/Infrastructure View





- The idea of **service** as a consumer and **component** as a provider permit as to predefine the “impact” on a service when a components is not “available”
- The hi-model contains static information
 - Could be discover in deployment system configuration
- Model exhibits some “redundancy in relationship” but in CMDB world this it is not prohibited
- Overfilled description for simple service e.g. Frontier
- The aggregation of the information and data it is a challenge issue

CMDB group at CC-IN2P3



- Emmanouil Vamvakopoulos (Coord., **support**)
- Pierre-Etienne Macchi (**Supervisor**)
- Cyril L'Orphelin (**Developer**)
- Frédéric Azevedo (**Quality**)
- Marc Hausard (**Operation and Monitoring Services**)
- Pascal Trouvé (**Building Services**)
- Pierre Veyre (**Developer**)
- Sylvain Reynaud (**Developer, advance reporter**)
- Xavier Canehan (**Operation, sysadmin**)

Books and Guides

- *The CMDB Imperative* Glenn O'Donnell and Carlos Casanova (2009)
- *The IT Skeptic Looks at CMDB* , **Rob England** (14 avril 2009)
- *Basic Service Management*, **Rob England** (2011)
- *Step-by-Step Guide to Building a CMDB - BMC Software* (2008)

■ **Workshops**

- Define the requirements for the deployment of a CMDB system at **IN2P3-CC** (HEPiX spring 2012)
- Report from CMDBuild BoF session (HEPiX spring 2012)
- Experience with new Service Management at CERN Presented by Dr. **Patricia MENDEZ LORENZO** (HEPiX spring 2012)
- Implementing Service Management processes with Service-Now Presented by **Zhechka TOTEVA** ((HEPiX spring 2011)

*Thank for your
attention!*

?

EXTRA SLIDES

Data aggregation



- We are conscious about data exchange approach
 - Data view and grouping
 - Data Reconciliation
 - Data validation and integrity
- Lavoisier framework :
 - Manage heterogeneous technologies & data
 - Can aggregate data
 - Provide data in standard way and different formats (xml, json, csv, html)
 - Can filter high volume of data in streaming mode
 - Can adapt the frequency of the refresh depending from the data
 - Different possible types of refresh (period, determined time , notification)
 - Can check the validity of data and notified in case of problems
 - Lot of plug-ins already existing