

#### Enabling Grids for E-sciencE



# The Grid Observatory Specific Support Center and the EGI ecosytem

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www.eu-egee.org







## The EGI ecosystem

**Enabling Grids for E-sciencE** 

#### Overview

- "Core" EGI (operations)
  - 1.2.1-2 One and only one proposal accepted
- EMI (middleware)
  - 1.2.1.3: Middleware and repositories
- SSC (user communities) proposals
  - 1.2.3: Virtual Research Communities (23 M€)
  - Not dedicated to EGI, expect many proposals.
- And others: Application Porting Support, Dissemination, ...

#### ROSCOE: Robust Scientific Communities for EGI

 High Energy Physics, Life Science, Computation Chemistry, Complexity Sciences, Grid Observatory, Photon Sciences, Humanities.





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- Support
- Service
- Communities

Sustainability

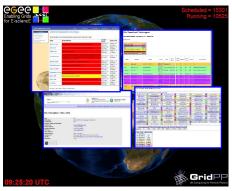
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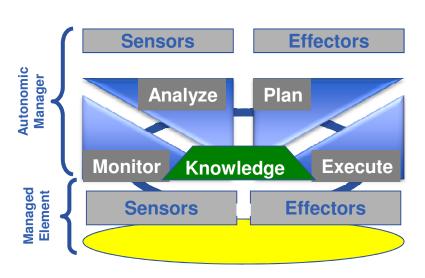


## Sustainability/Communities

- Bottom line is: EC-funded effort should be SMALL part of SSC work plan
- Community identification and involvement
- Adequate contextualization is essential: wellestablished engineering and/or scientific areas









## **Digital Curation**

Enabling Grids for E-sciencE

Digital curation is the selection, preservation, maintenance, and collection and archiving of digital assets for current and future reference by researchers, scientists, and historians, and scholars generally

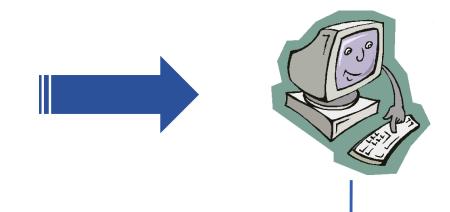
- Digital curation entails:
  - Collecting verifiable digital assets
  - Providing digital asset search and retrieval
  - Certification of the trustworthiness and integrity of the collection content
  - Semantic and ontological continuity and comparability of the collection content

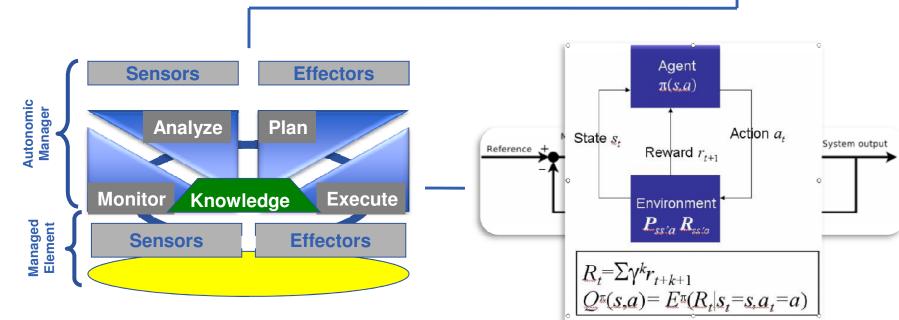


#### **Autonomic Computing**

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# Short-deadline job reservation for grid26.lal.in2p3.fr
SRCFG[11] HOSTLIST=grid26.lal.in2p3.fr
SRCFG[11] PERIOD=INFINITY
SRCFG[11] ACCESS=DEDICATED
SRCFG[11] TASKCOUNT=1
SRCFG[11] RESOURCES=PROCS:2
SRCFG[11] CLASSLIST=sdj





**Enabling Grids for E-sciencE** 

Data
Collection
and
publication

Acquisition

Gateway

Contributing to a sustainable operations model

Models of the Grid Dynamics

An Information Service Organization Grid Ontology

> Ontology Building

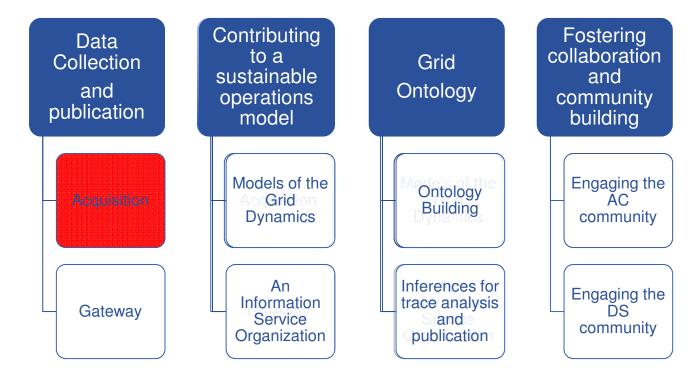
Inferences for trace analysis and publication Fostering collaboration and community building

Engaging the AC community

Engaging the DS community

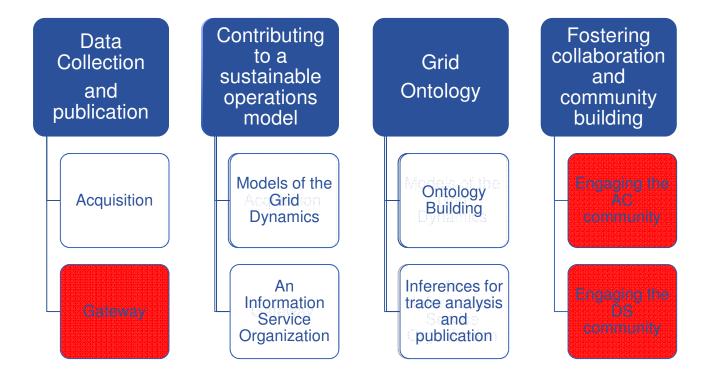


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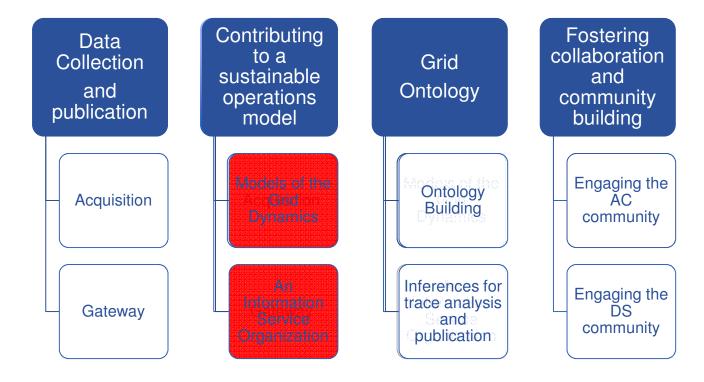


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Semantic and ontological continuity and comparability of the collection

content Collection

publication Acquisition

Gateway

Data

and

Contributing to a sustainable operations model

> An Information Service Organization

Models of the

Grid

**Dynamics** 

Grid Ontology

> Ontology Building

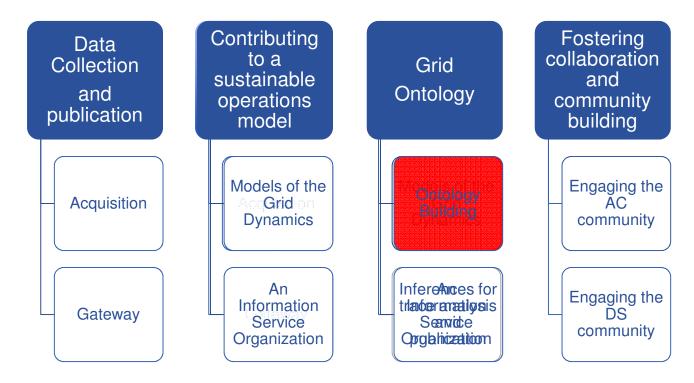
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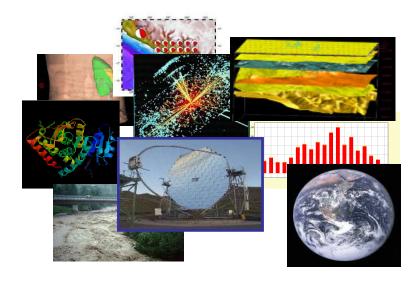
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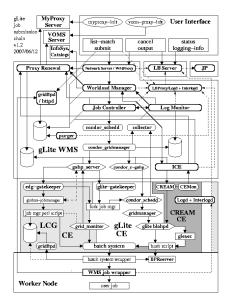




## A complex system

- Very different from data centers
- Coupled usage: Virtual Organization
  - Community software, community activity
  - Access rights
- Feedback loops in the middleware
  - Job dispatch
- Emerging policies
  - As the result of sites and stakeholders decisions
- Inference of models for middleware components and applications, users and usage profiles, users interactions





#### Sustainability

- Nascent community
- EGI is the European reference for production grid
- Unbalanced external/internal contribution in EGEE-III

#### Scalability

- Rate of creation of new data and data sets: Acquisition
- Slashdot effect: Gateway
- Pre-processing, inferences
- All with impact on community building

#### Agility

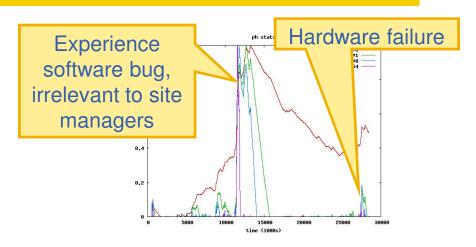
- Storage format evolution and obsolescence
- Broad access and searching flexibility and variety
- Interaction with the EGI ecosystem

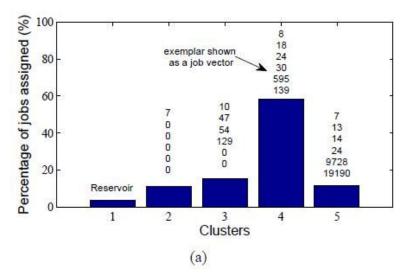
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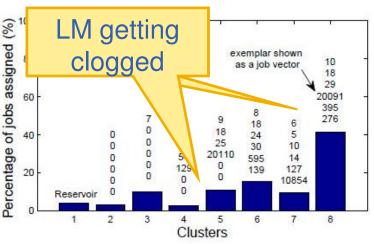


## CGC Interaction with the EGI ecosystem

- Traces constrain to realistic hypotheses
- **Expert interpretation needed**
- No immediate return on investment for the expert
- CUSUM is the standard in industry
- Cache analysis concepts have been quite sucessfull









#### Virtuous circle

