



Enabling Grids for E-scienceE

GLUE 2.0

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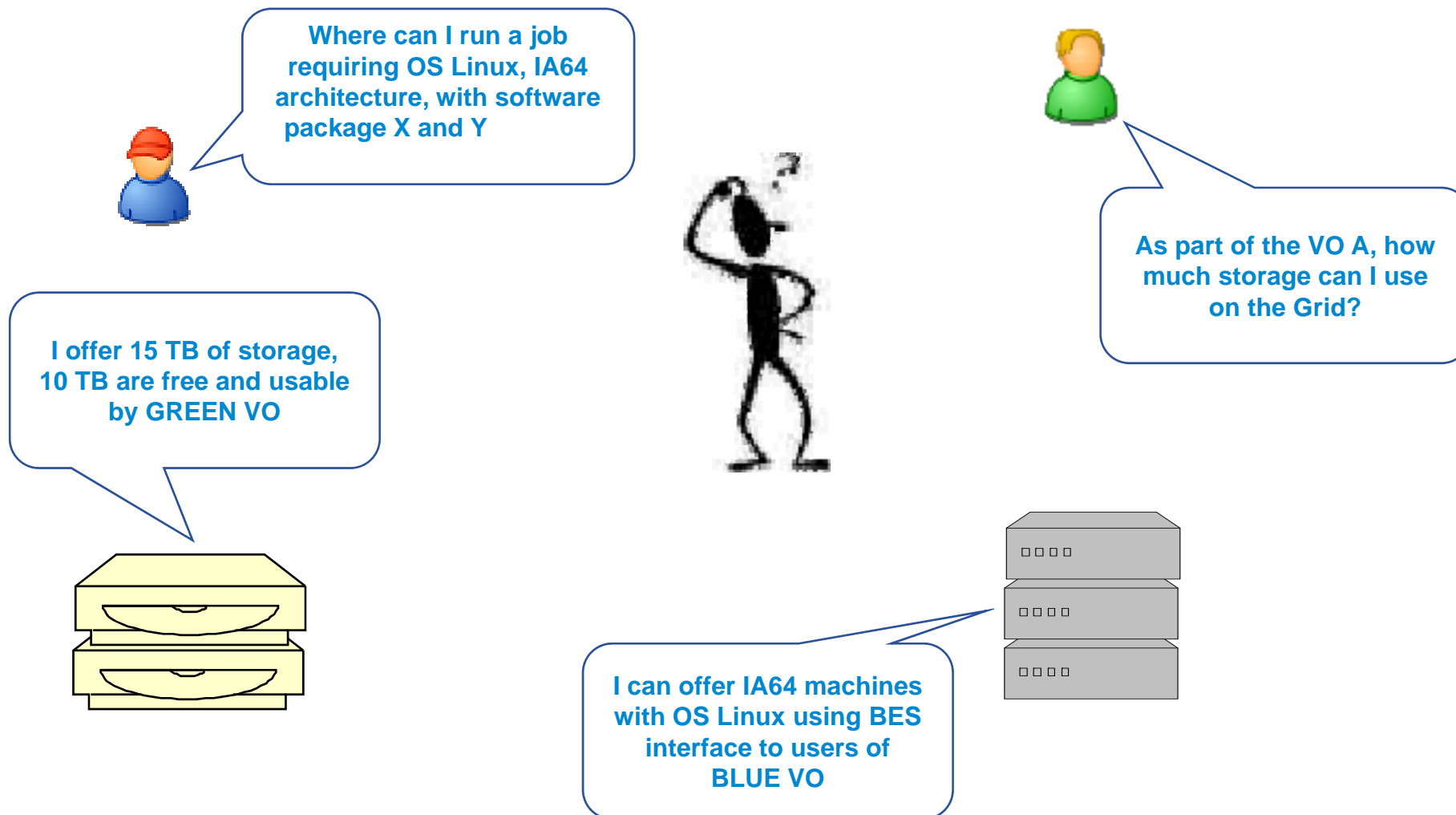
*CERN IT-GD
EGEE 2008*

www.eu-egee.org



- **What is GLUE**
 - Information Model
- **GLUE = Grid Laboratory Unified Environment**
- **How does the Environment which the information model tries to unify look like ?**

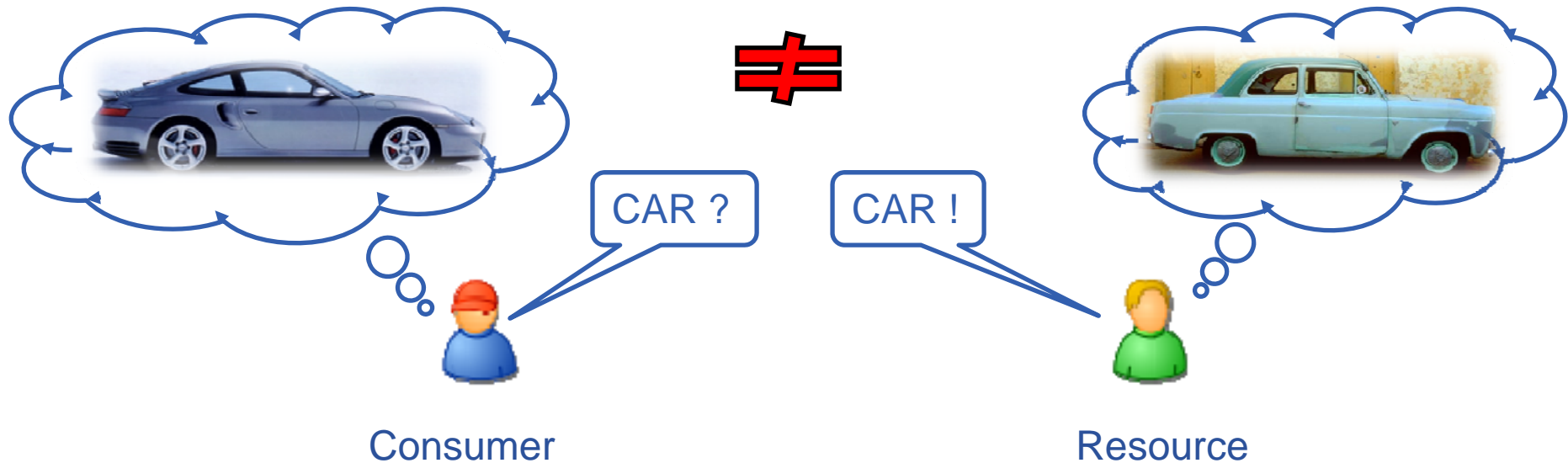
- **Environment with resources and consumers**



- **Resources have heterogeneous characteristics**
- **Service Interfaces are yet heterogeneous**
 - Converging towards common standards
- **Users have needs to be satisfied**
- **How to describe resources/services shared in Grid systems in order to enable:**
 - Resource awareness
 - Resource discoverability
 - Resource requirements expression
 - Resource basic monitoring
- **Infrastructures want to Interoperate**

- **What is GLUE ?**
 - Information Model
 - Defines a **common** conceptual data model to be used for Grid resource/service discovery and monitoring
 - Do we mean the same thing ?
 - Agreement on entities

- **Definition:**
 - CAR = 4 Weels, Steering, Engine, (at least) 2 seats, 2 doors

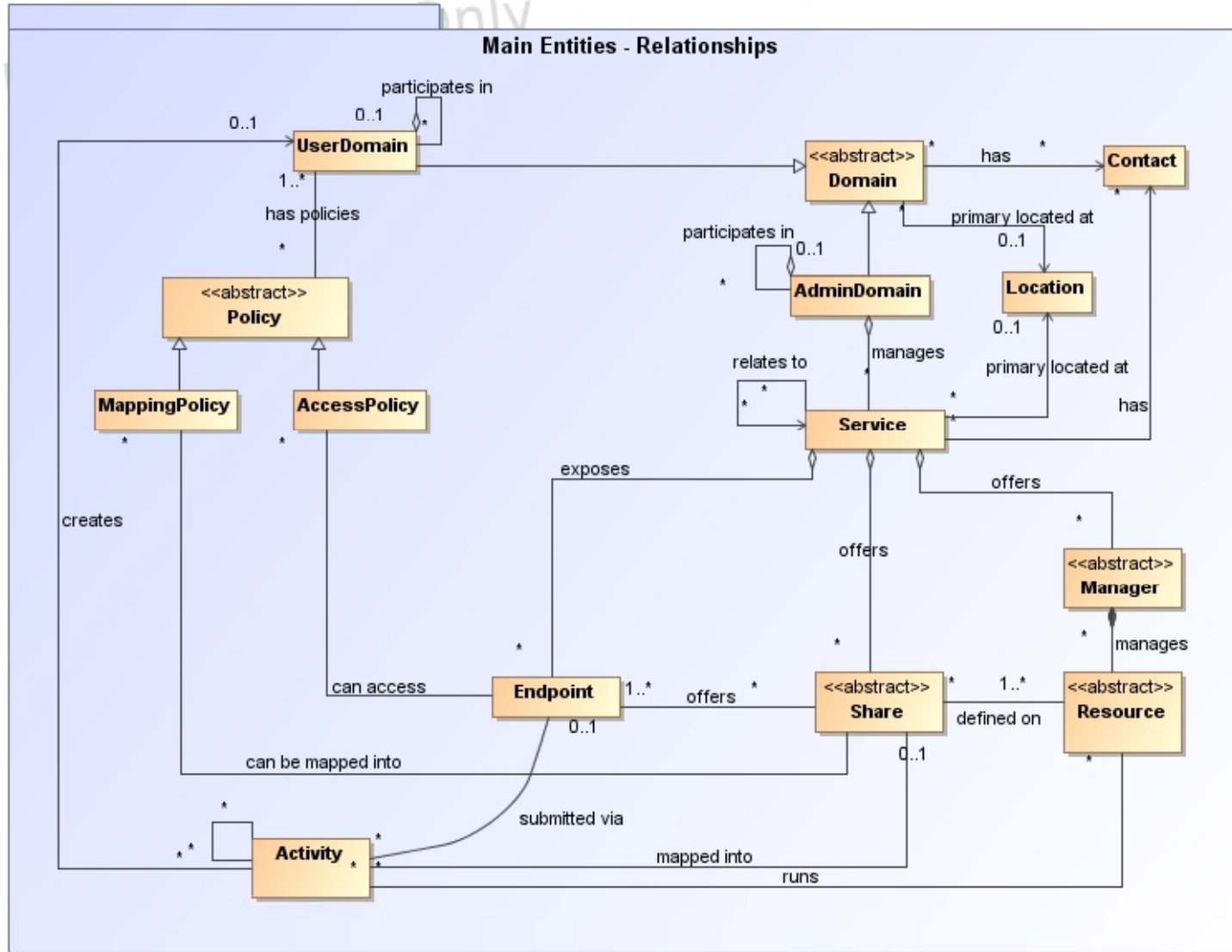


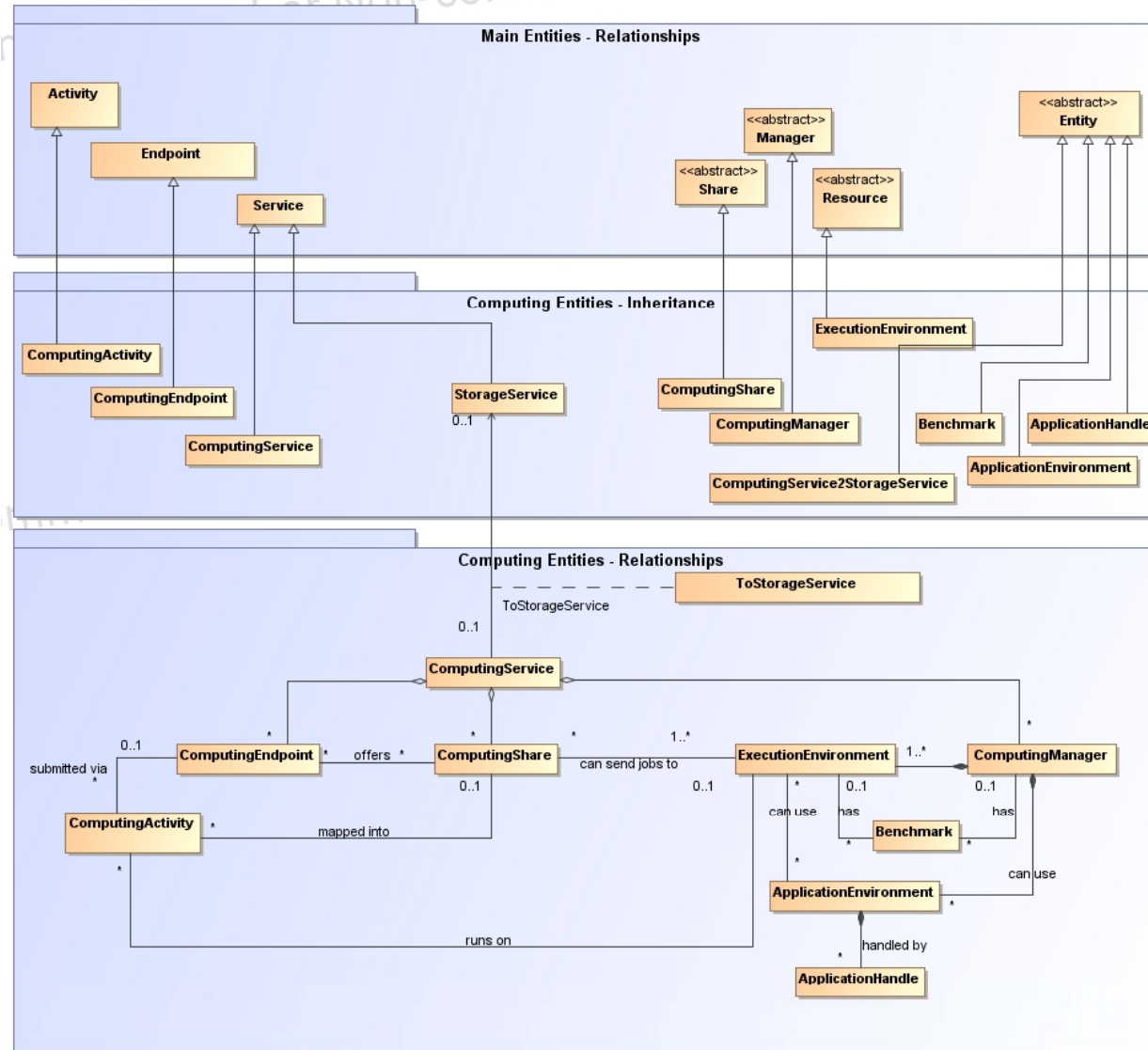
- **History**

- First version released in April **2002** by collaboration effort of EU-DataTAG, EU-DataGrid and US-iVDGL
- v1.2 released Dec **2005** EGEE, LCG, Grid3/OSG, Globus and NorduGrid
- Working group part of the **OpenGridForum** (OGF) from Oct **2006**
- v1.3 released Jan **2007**
- Current production version : 1.3

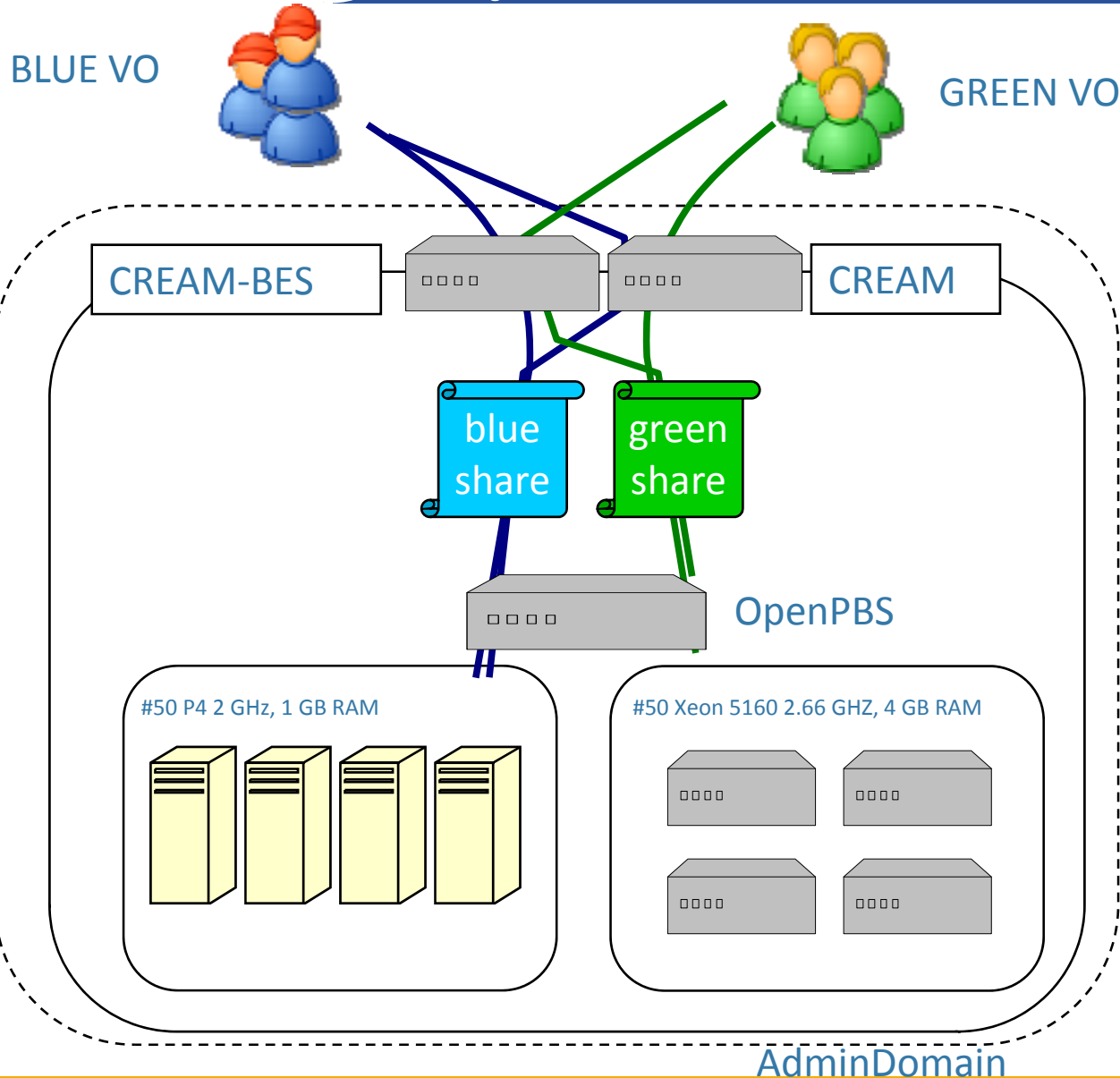
- **Several Grid infrastructures using different schema definitions**
 - e.g.: NorduGrid, TeraGrid, NAREGI
- **The most widely deployed schema definition is GLUE Schema 1.x**
 - Designed to support service/resource selection
 - Adopted by gLite and other grid middlewares (e.g. OSG)
- **Information basis for Grid Services**

- **GLUE v2.0**
 - Ideas raised during 1.3 discussions
 - Elaborated in respect of 1.3 limitations
 - Design started Feb 2007
- **Two documents have recently terminated the Public Comment period**
 - GLUE Specification – v.2.0
 - Conceptual model in three sub-models
 - *Main Entities*
 - *Computing Entities*
 - *Storage Entities*
 - GLUE v. 2.0 – Reference Realizations to Concrete Data Models
 - XSD
 - SQL
 - LDAP





Computing Entities Example



GLUE 2.0
concepts

UserDomain

AdminDomain

ComputingService

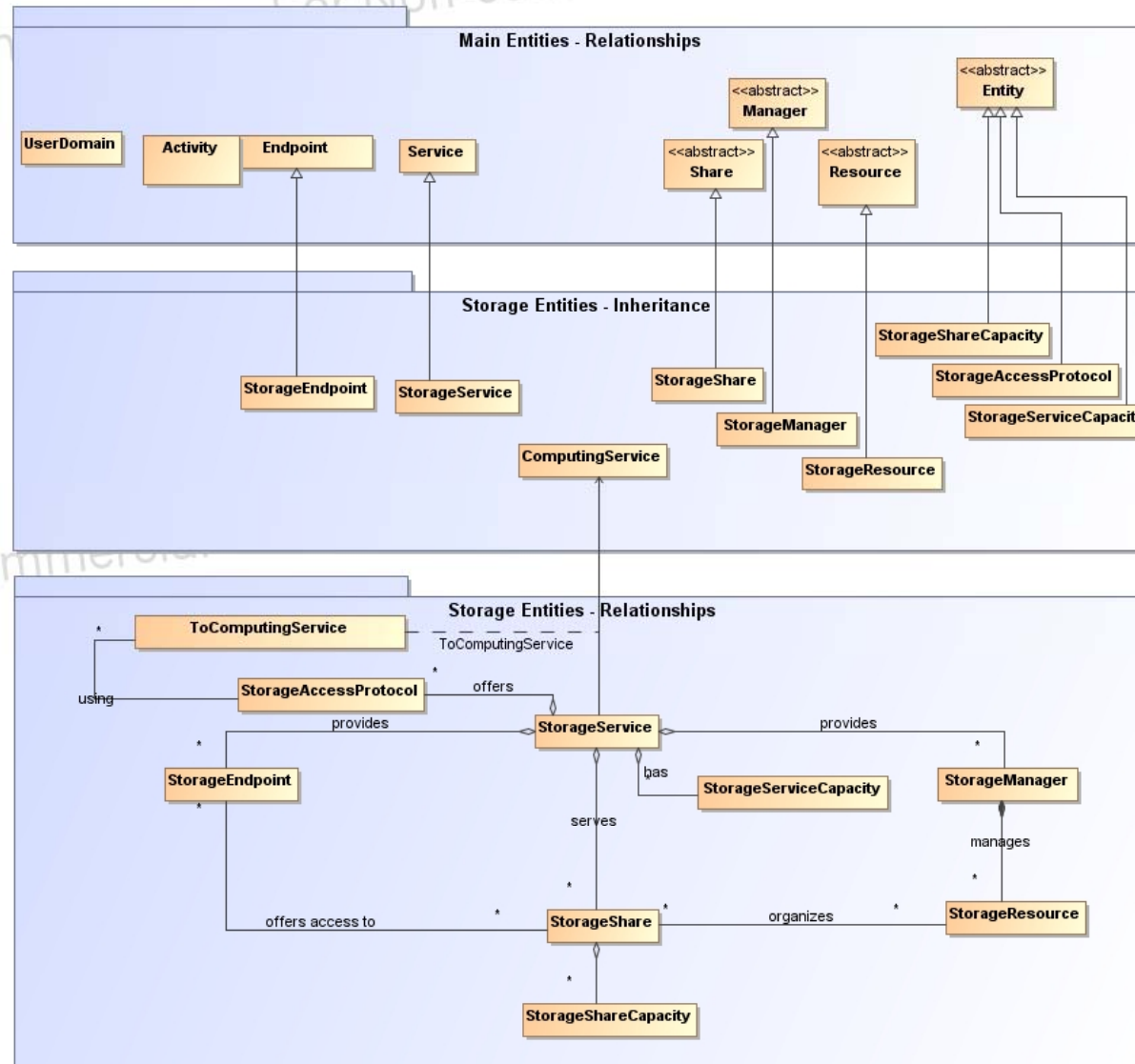
ComputingEndpoint

ComputingShare

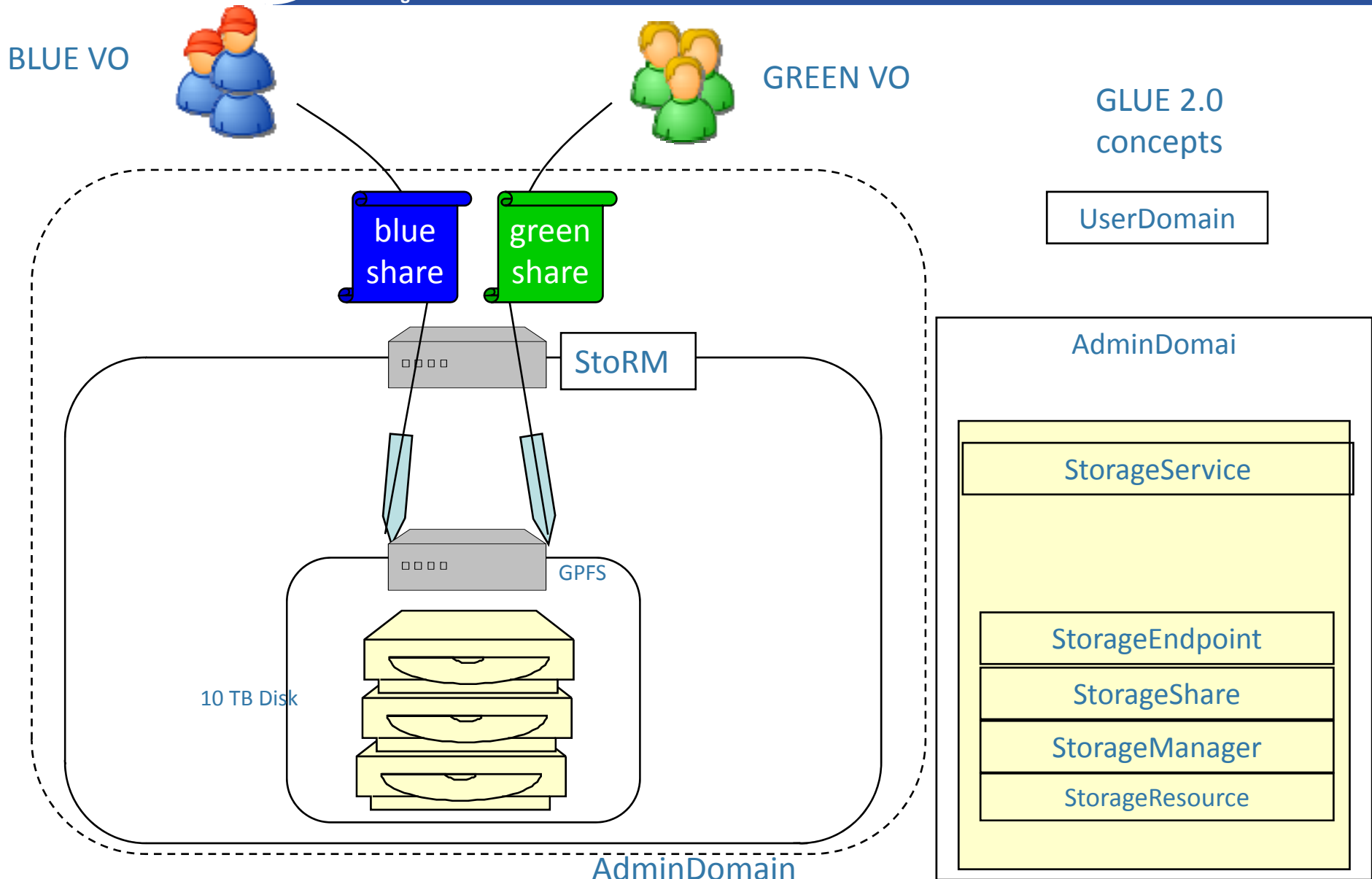
ComputingManager

ExecutionEnvironment

ApplicationEnvironment



Storage Entities Example



- **So, makes the difference to Glue 1.3 ?**
 - Identification of main entities
 - Higher flexibility
 - Attributes/Entities are optional
 - Service2Service relationship
 - Domain2Domain relationship
 - Predefined Values for Attributes
 - Closed / open enumeration
 - Less ambiguity
 - Attributes are more defined
 - e.g. total CPUs accounting
 - Allows non model specific attributes by *Extention* entity
- **However:**
 - Gained complexity
 - Not backward compatible to v1.3

- **OMII-Europe**
- **EGEE**
- **ARC**
- **TeraGrid**
- **UNICORE**
- **DEISA**
- **D-Grid**
- **AustralianGrid**
- **NAREGI**
- **NGS**
- **OSG**
- **BREIN**

- **Need to resume regular phone-conferences to digest all the comments and move to final version**
 - From October '08
- **Preliminary Implementation Experience reports**
- **Deployment plans**
 - Deployment of schema on BDII instances : 2 months
 - Parallel with 1.3
 - New Infoproviders after 4-6 months
 - Obsoleting old info providers after 1,5-2 years

- **Discussions, discussions..**
 - 45 telephone conferences within 422days (~1,15years)
 - ~6 participants / phone conference
 - min 1,5h each => 67h of talking (rather 90h)
 - 42 draft versions => every 10days a new version
 - 18,261 words, 55pages => solidified ~272words/hour

- **OGF GLUE Working Group**
 - <http://forge.ogf.org/sf/sfmain/do/viewProject/projects.glue-wg>
- **GLUE 2.0 Documents**
 - <http://www.ogf.org/pipermail/glue-wg/2008-May/000740.html>