



Enabling Grids for E-scienceE

The GLUE Schema

Status and Plans

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- **Origins and Aims**
- **Glue 1.3**
- **Move to OGF**
- **Glue 2.0**

- **GLUE: Grid Laboratory Uniform Environment**
 - Started in April 2002
 - Joint activity between EU-DataTAG, US-iVDGL and EDG
 - Focused on interoperability between US and EU HEP projects
 - Aimed to provide common schema to facilitate interoperations
- **Initial versions**
 - v1.0 (released Nov 2002)
 - v1.1 (released April 2003)
- **HEP driven revisions**
 - v1.2 (released Dec 2005)
 - v1.3 (released Oct 2006)

- **Initial versions defined based on limited experience**
 - Real deployment highlighted limitations
- **Version 1.2 aimed to address these limitations**
 - Describing the SRM
 - Describing web services and endpoints
 - Describing VO level access control
 - Ensure interoperability with OSG for WLCG
- **An incremental approach taken**
 - Only make the minimal changes
 - Only solve problems found in deployment
 - Ensure backwards compatibility
- **For non-backwards compatible changes**
 - Introduced the idea of defining Glue 2.0 at a future date

- **Last minute changes for LHC start-up.**
 - Could not wait for Glue 2.0
 - Main focus was SRM 2.x
- **Deadline for suggested changes September 2006**
 - 44 suggested changes
- **Meeting at IC London October 2006 to discuss changes**
 - 30 accepted and included
 - 8 rejected
 - 5 duplicated
- **Version 1.3 deployed the beginning of 2007**
 - Ongoing migration with respect to usage 😊

- **No requirement for v1.4 😊**
 - Suggests that things are not too bad
 - No blocking issues that urgently require a schema change
 - Things are not perfect but we can wait for Glue 2.0
- **Proved useful in interoperation activities**
 - OSG, NDGF, gin-info, Unicore, NAREGI etc.
- **The understanding of the schema has improved**
- **Interpretation of the schema has been tightened**
 - GlueUse within EGEE Twiki page
 - How to publish my site information GOC wiki page
 - Service Information Provider
 - WLCG Glue Usage document
 - *WLCG Installed Capacity information*

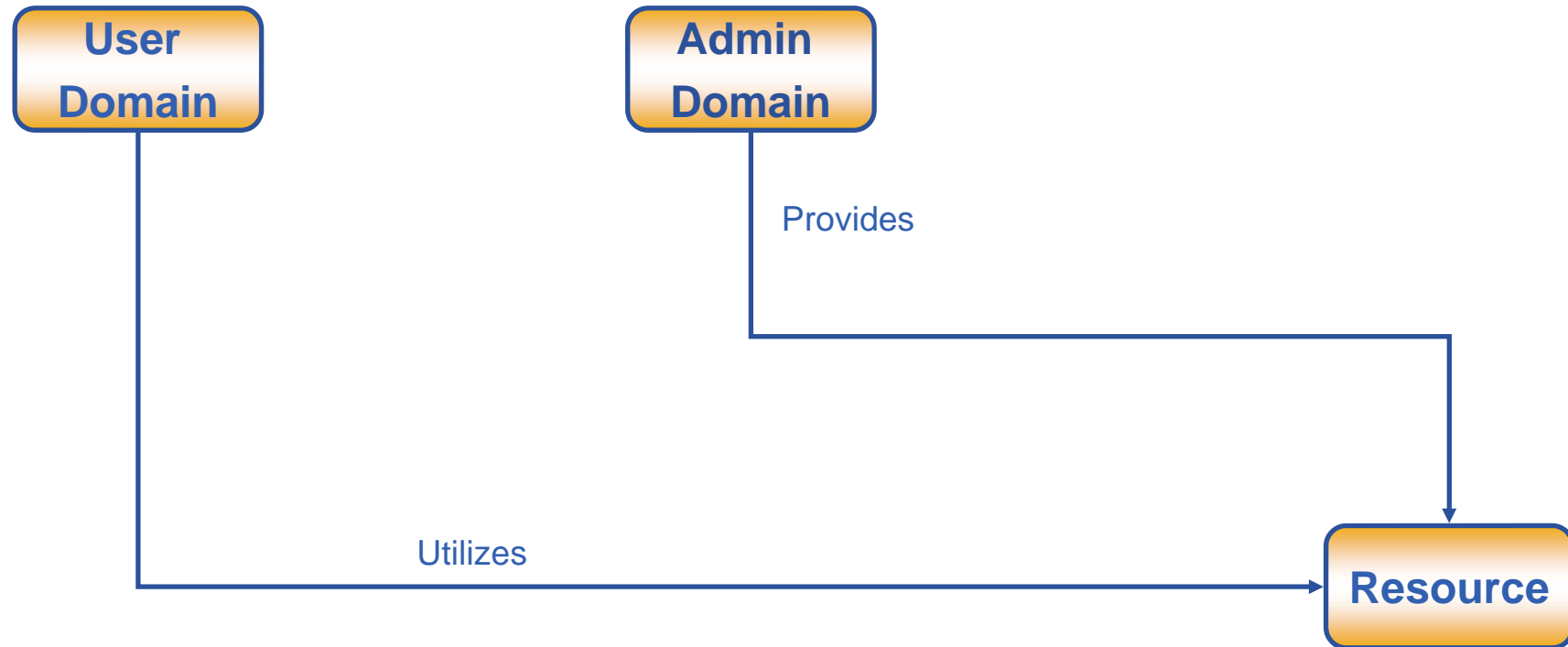
- WLCG Installed Capacity Document (Editor: Flavia Donno)
- Describes how to use the GLUE v1.3 information
 - to show the total installed capacity and resource usage
 - by the VOs at sites
- **States what must be published**
 - And how
- **Improves many definitions**
 - And provides methods for calculating certain values
- **For more details see the document**
 - http://twiki.cern.ch/twiki/pub/LCG/WLCGCommonComputingReadinessChallenges/WLCG_GlueSchemaUsage-1.8.pdf

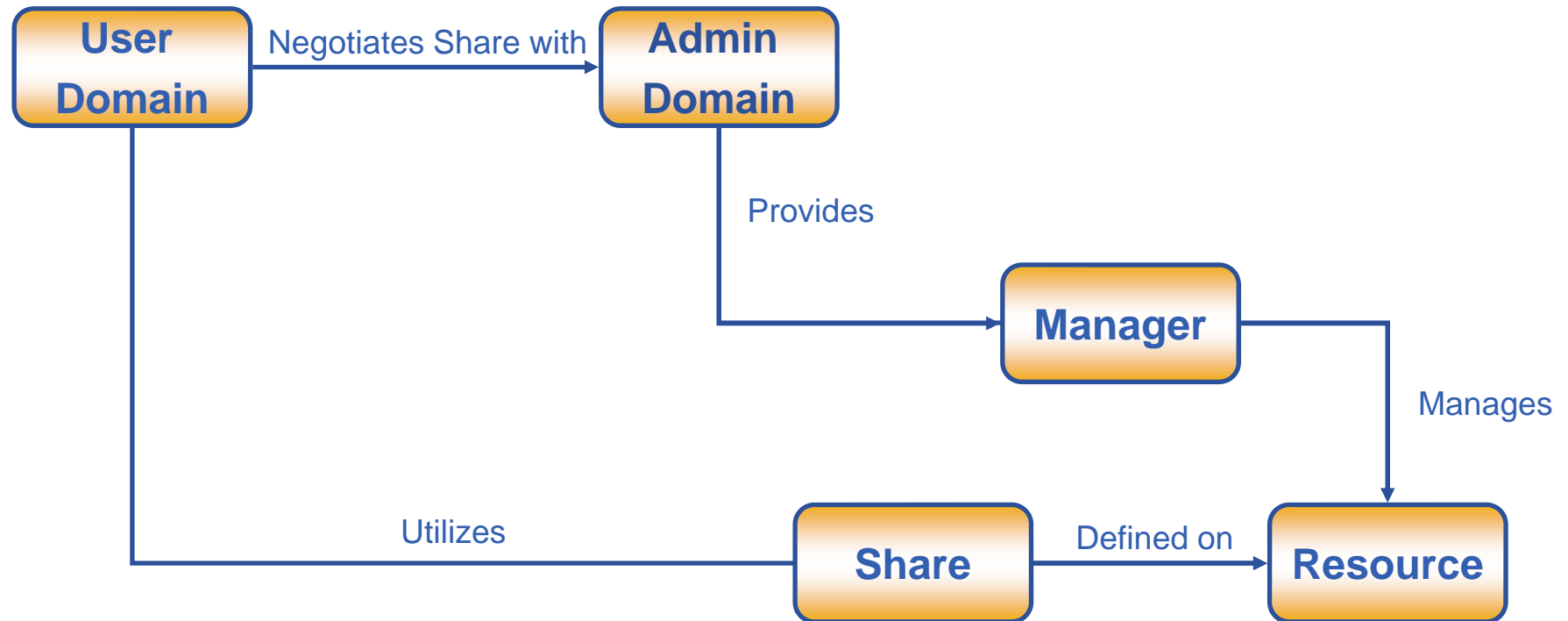
- **Conceptual and structural changes left for Glue 2.0**
 - Discussion on GLUE 2.0 at the Oct 2006 meeting in London
- **Decision made to define Glue 2.0 within OGF**
 - Improve the acceptance of GLUE by other communities
 - The OGF process should not create too much overhead
- **GLUE-WG started in Jan 2007 at OGF19**
 - Building on the 4 years of existing work
- **Positive Outcomes**
 - GLUE widely accepted within OGF
 - Seen as an important contribution
 - Grid Forge helped the activity coordination
 - Broad view points limited assumptions
 - Increased participation from other projects
 - And hence acceptance by those projects.

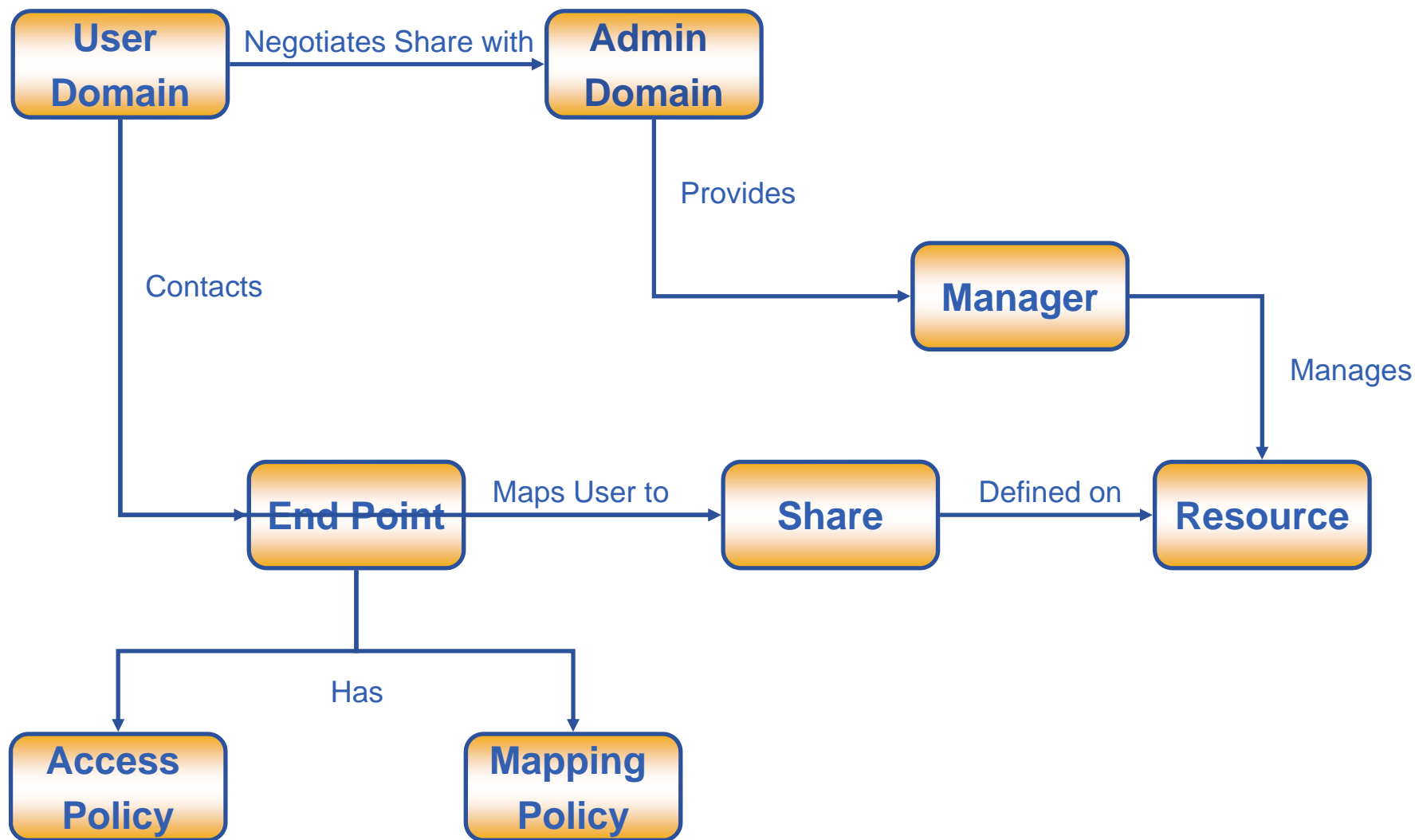
- **Oct 2006, Decision taken to move into OGF**
- **Jan 2007 (OGF 19), First working group meeting**
- **June 2008 (OGF 23), Spec. entered public comments**
- **Aug 2008, Public comment period ended**
- **Nov 2008, Started addressing comments**

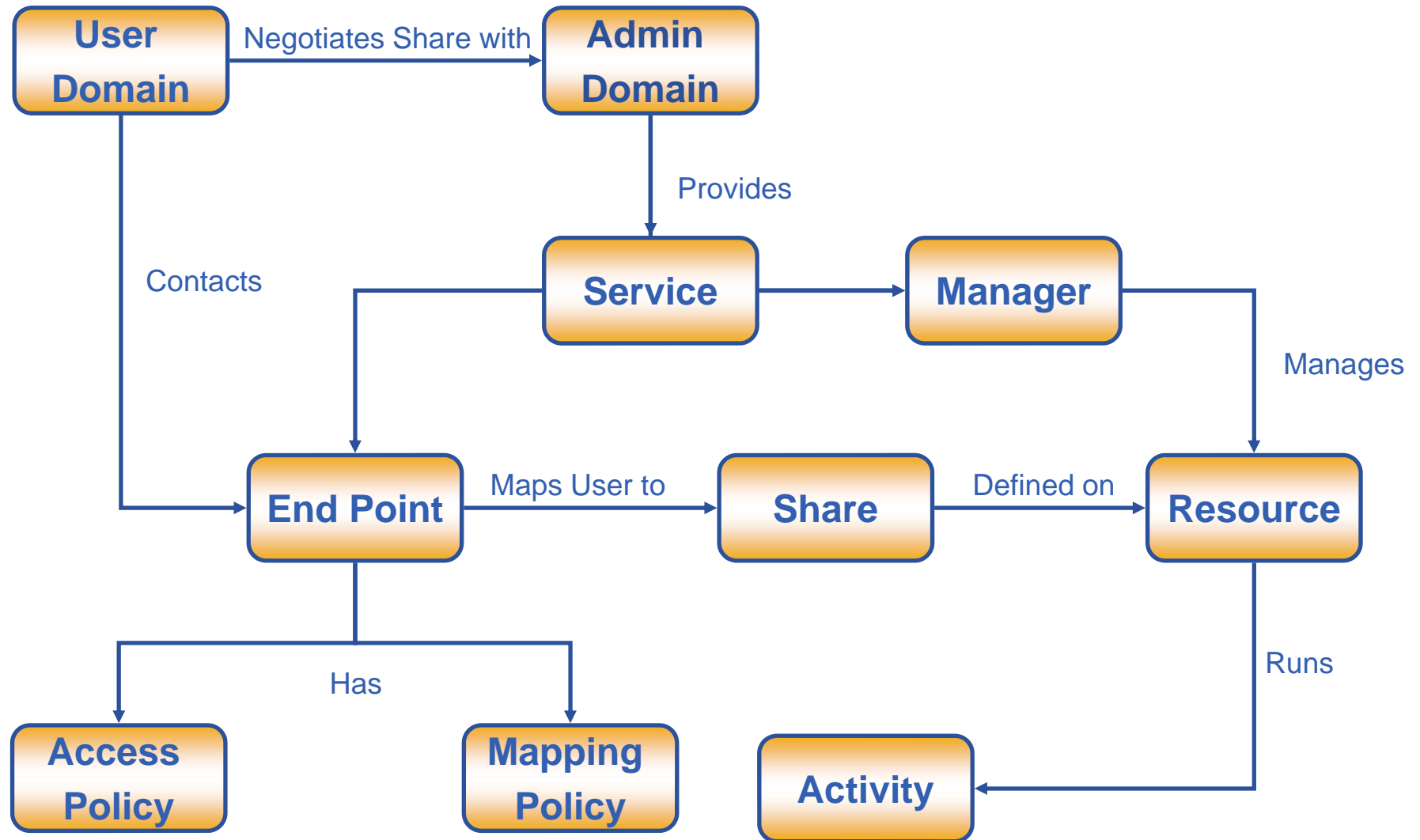
- **Jan 2009, Final Spec. ready?**
- **Mar 2009, Glue 2.0 official OFG Specification?**

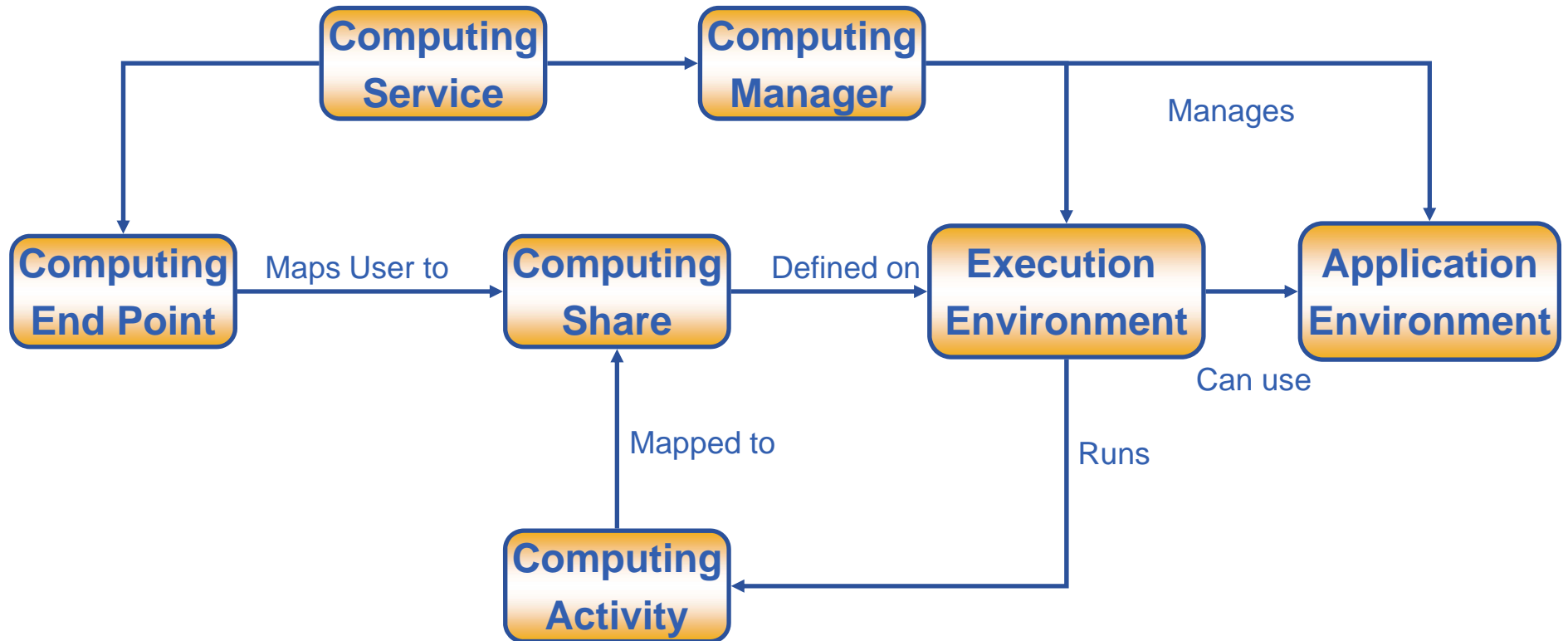
- **1st April 2009, Start work on Glue 2.1 ☺**

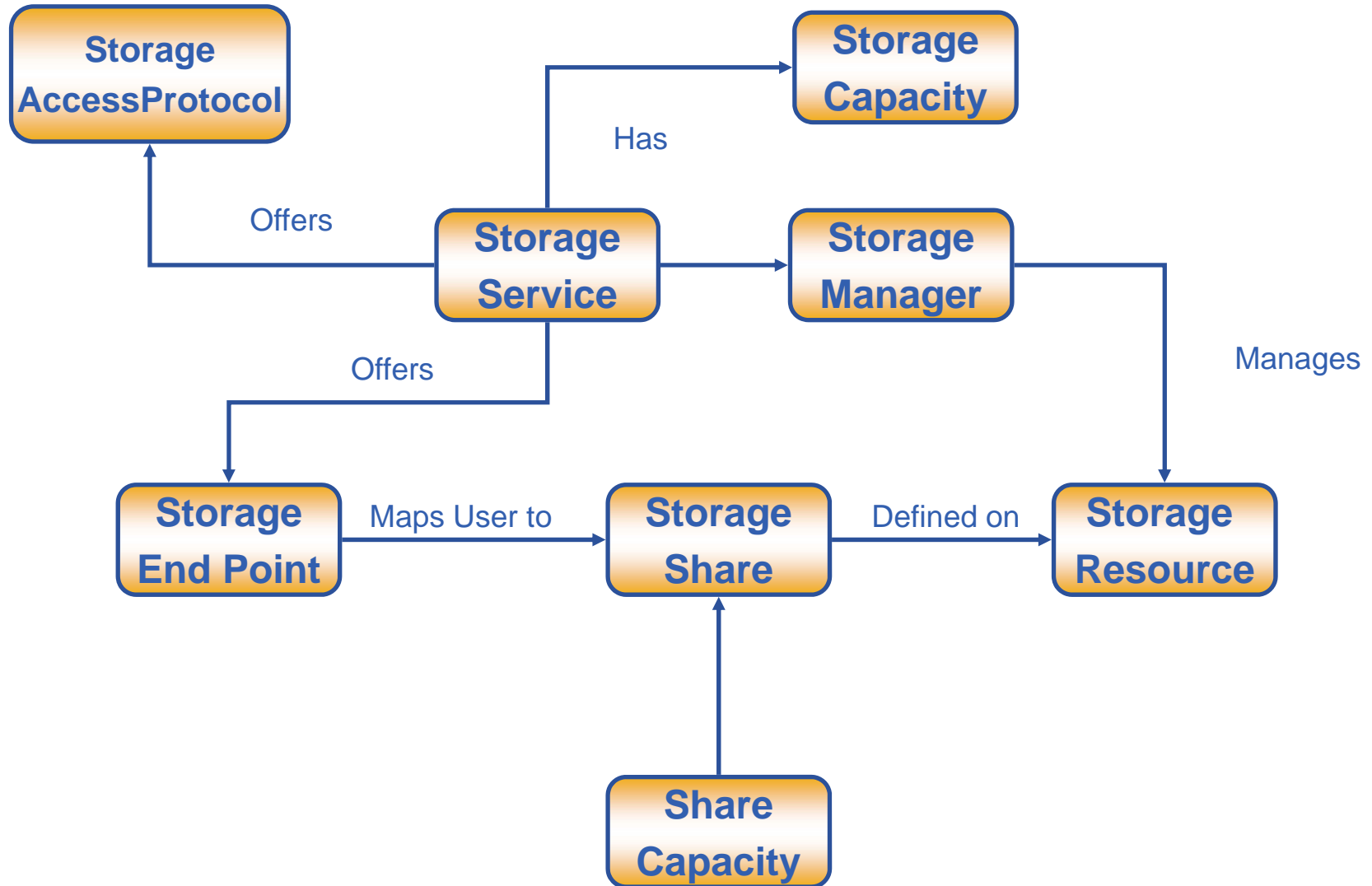












- 1. Create a hybrid schema file with both v1.3 and v2.0**
 - Deploy across the infrastructure
 - Should have negligible side effects
 - Est. 3 - 6 months after specification fixed
- 2. Update information providers**
 - Publish Glue 2.0 information in addition to Glue 1.3
 - Deploy across the infrastructure
 - Est. 4 - 12 months after specification fixed
- 3. Update software and tooling as necessary**
 - Est. 6 - 36 months after specification fixed
- 4. Remove Glue 1.3 providers when no longer required**
 1. Est. 36 - ?? months after specification fixed

- **45 phone conferences**
 - 1.5 hours each ~ 3 days talking
 - 5 people participating ~ 2 months FTE invested in total
 - Split between projects (EGEE, WLCG, Teragrid, Nordugrid, DEISA)
 - This does not include the time invested by editor (OMII-Europe)
- **40 versions of the document**
 - 347 days between first conference and initial specification
 - 46 pages, 12787 words
 - Document updated nearly every week
- **254 Attributes**
 - 28 Objects
- **Four different renderings**
 - LDIF, XML, Relational and CIM

- **Glue v1.x series been production hardened**
 - v1.3 has proven itself in production
- **Ongoing efforts to improve the use of v1.3**
- **Glue 2.0 is a major revision of the schema**
 - Based of over 4 years production feed back
 - Carried out within the OGF
 - Increasing the participation and adoption
- **OGF was a positive experience**
 - The OGF process had a negligible overhead
- **Planed roll out of v2.0 during 2009 and beyond**