Summary of NAREGI discussions on GLUE/CIM

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OUTLINE

gLite and GLUE Schema 1.2
vs.
NAREGI and CIM

- Comparison
- Interoperability plan (short term)
- Convergence plan (long term)
- Considerations

Projects

- **EGEE**
  - Enabling Grids for E-sciencE (EGEE) project is funded by the European Commission
    - 1st phase 2004-2006
    - 2nd phase 2006-2008
  - Objective: to build on recent advances in grid technology and develop a service grid infrastructure which is available to scientists 24 hours-a-day
- **NAREGI**
  - Japanese National Research Grid Initiative established in 2003
  - Objective: to develop operational middleware, which conforms to global standards, for large-scale, widely-distributed computing environments (science grid) in advanced research and education
  - Heavy adoption of GGF-related standards

Information Model

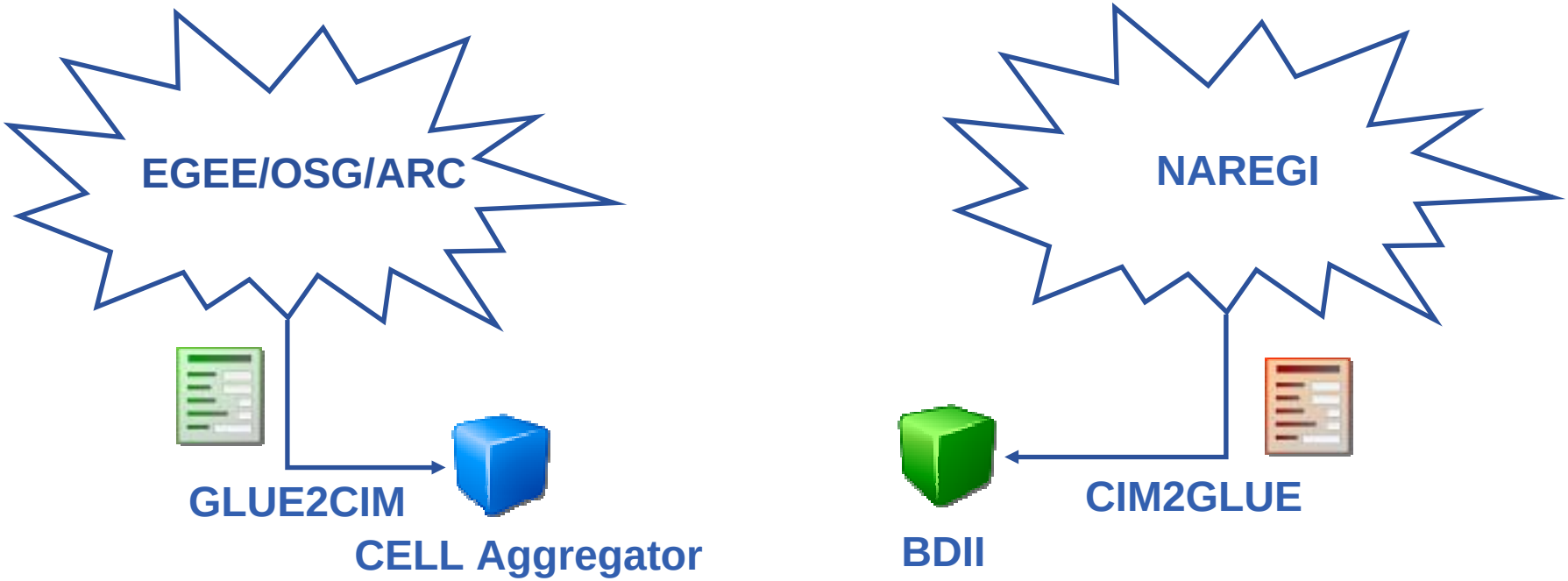
- **EGEE**
  - GLUE Schema 1.2
    - Tailored approach to modeling Grid resources for discovery and matchmaking purposes
  - Conceptual modeling: UML Class Diagram
  - Mapping: LDAP*, XML, SQL
  - *used in production information service
- **NAREGI**
  - CIM 2.10 + extensions
  - provides a common definition of management information for systems, networks, applications and services, and allows for vendor extensions
  - CIM's common definitions enable vendors to exchange semantically rich management information between systems throughout the network.
  - Conceptual modeling: UML Class Diagram
  - Mapping: XML
  - Conversion to SQL to be injected in the OGSA-DAI-based information service

Information Service

- **EGEE**
  - Based on LDAP technologies, started using MDS 2.x, then some component replaced with OpenLDAP server with BD backend
  - R-GMA in parallel
  - Info providers are based on GIP (Generic Info Providers)
- **NAREGI**
  - Based on OGSA-DAI (WSRF flavour)
  - Offers also WS-I RUS for accounting information
  - Info providers are based on CIMOM (CIM Object Manager)
    - handles the interaction between management applications and providers
    - it supports services such as event notification, remote access, and query processing
    - Requests on instances of a CIM class are dispatched to the provider responsible for extracting the dynamic data for that CIM Class

Interoperability Plan (short term)

- **Approach:**
  - Set up information gateways where each part can access information about the other Grid using own interface, protocol and schema



Interoperability Plan (short term)

- **Tasks:**
  - Assess the GLUE/CIM translation document
  - Write translator from CIM to GLUE
  - Write translator from GLUE to CIM
  - Set up a BDII representing NAREGI
  - Set up a cell representing OSG/EGEE/ARC

Convergence Plan (long term)

- **The “information gateway” is a short term solution**
- **The GGF Grid Interoperability Now (GIN) Working Group aims at promoting adoption of CIM for information modeling:**
  - is a widely adopted industry standard managed by DMTF (Distributed Management Task Force) and supported by many industries
  - alliance in place between DMTF and GGF
  - NAREGI will contribute their experience in implementing/extending CIM-related technologies
  - Extend CIM with GLUE Schema concepts in order to gain from the GLUE experience

My Personal Opinions

- **CIM and WBEM appealing solution**
- **If we decide to include GLUE Schema into CIM and adopt a native CIM approach, we have to:**
  - allocate adeguate manpower with appropriate skills
    - To manage the schema
      - *CIM schema is very large and the GLUE Schema will be splitted in different parts*
    - To write info provider
      - *Information provider infrastructure totally different (need to use CIMOM)*
  - consider that for non-experts in information modeling it will become much more difficult to understand what the set of relevant information to EGEE is; possible idea:
    - GLUE Schema 2 as “compact view” over CIM of the relevant attributes to Grid Information Service
    - To be used to exchange knowledge among Grid experts that do not know much about info modeling and CIM
    - InfoModelers experts will manage GLUE 2 vs. CIM mapping

CONCLUSION

- EU-US HEP Grid communities have developed the GLUE Schema as a tailored information model for discovery and matchmaking for Grid systems
- Interoperability with other Grids and promotion of industry-wide adopted standards are pushing GGF towards the adoption of CIM powered by GLUE Schema experience
- Short term interoperability plan between EGEE and NAREGI will give us the opportunity to approach CIM technologies
- In the long term, we have to make important decisions considering that moving to native CIM requires adeguate investment in terms of dedicated manpower

REFERENCE

[1] GLUE Schema website

http://infnforge.cnaf.infn.it/glueinfomodel/

[2] DMTF CIM Website

http://www.dmtf.org/standards/cim/

[3] NAREGI

http://www.naregi.org/index_e.html

[4] WBEM Services

http://wbemservices.sourceforge.net/

[5] GGF GIN INFO - resources

https://forge.gridforum.org/tracker/?aid=1719