

Booth #649

NAREGI Activities for Grid Interoperation

November 2006

NAREGI program
National Institute of Informatics

GIN (Grid Interoperation Now)



- ❖ An activity of OGF for interoperation among production grids
- ❖ Major grid projects are participating
 - EGEE, NAREGI, UK National Grid Service, NorduGrid, OSG, PRAGMA, TeraGrid, ...
- ❖ Trying to identify islands of interoperation between production grids and grow those islands
- ❖ Areas
 - GIN-auth: Authorization and Identity Management
 - GIN-data: Data Management and Movement
 - GIN-jobs: Job Description and Submission
 - GIN-info: Information Services and Schema
 - GIN-ops: Operations Experience of Pilot Test Applications



- ◆ Developing an interoperation island with EGEE
- ◆ Developing an Interoperation island with WS-GRAM based grids
- ◆ JSDL interoperability (for Phase-2)





NAREGI, Tokyo

NAREGI β 1 interoper+

pbg1049: Portal (nrggin), MyProxy

pbg1050: SuperScheduler, MyProxy+

pbg1052: Gfarm

pbg1054: Information Service (NAREGI)

pbg1055: Information Service (World)

png2048: UMS, VOMS

pbg2048: GridVM (computing resource)

pbg2050: GridVM (computing resource)

gLite 3.0 interoper+

png2049: VOMS (gin)

png2050: BDII

png2051: DPM

png2052: LFC

png2053: FTS

png2059: glite-UI

png2057: glite-CE (NAREGI bridge)

png2058: lcg-CE

Job Description and Submission

Agreements:

- ❖ GRAM and WS-GRAM islands for job submission are being established
- ❖ Grids offering Job Execution services should offer a persistent Community Software area where groups can install persistent code for their applications

(from OGF/GIN wiki)

• Bilateral job submission with EGEE

- Job type: simple & single job
- Brokering: No (partially yes)
- Interface:
 - NAREGI → EGEE: PreWS-GRAM I/F
 - EGEE → NAREGI: MetaScheduling I/F (*will be changed in near future*)

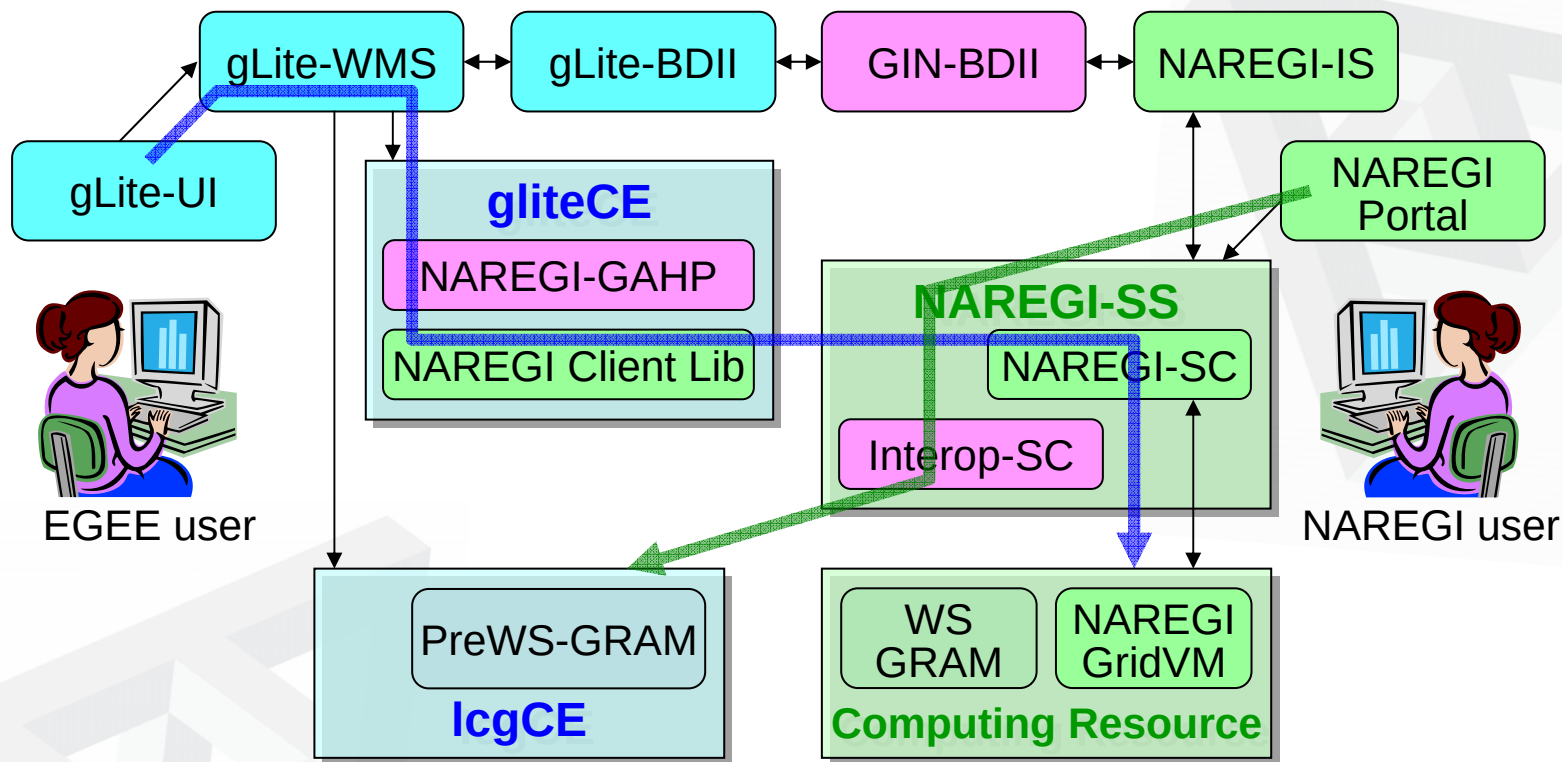
• Bilateral job submission with WS-GRAM based grids

- Job type: simple & single job
- Brokering: No
- Interface:
 - NAREGI → Other: WS-GRAM I/F
 - Other → NAREGI: WS-GRAM I/F (*coming soon*)

• JSDL interoperability

GIN-jobs: NAREGI-EGEE Architecture & Demo

Architecture



Demo

- NAREGI → EGEE: using NAREGI Workflow
- EGEE → NAREGI: using glite WMS commands

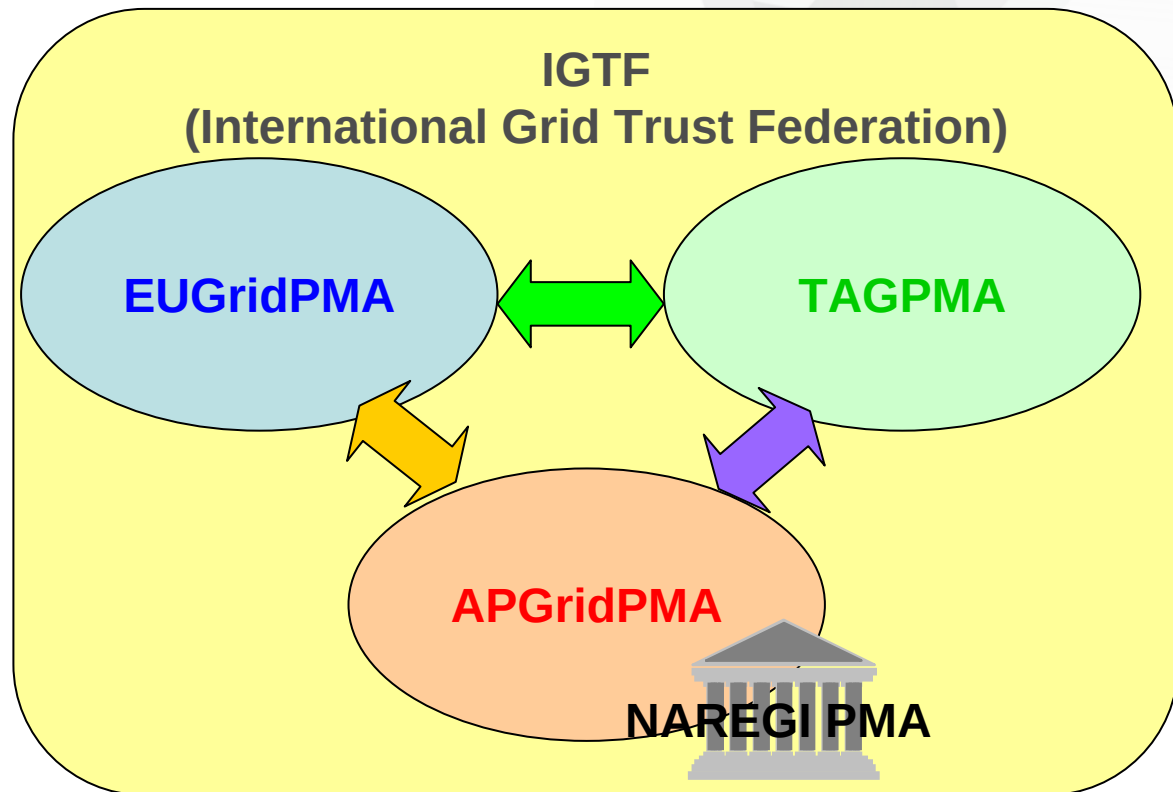
Authorization and Identity Management

Agreements:

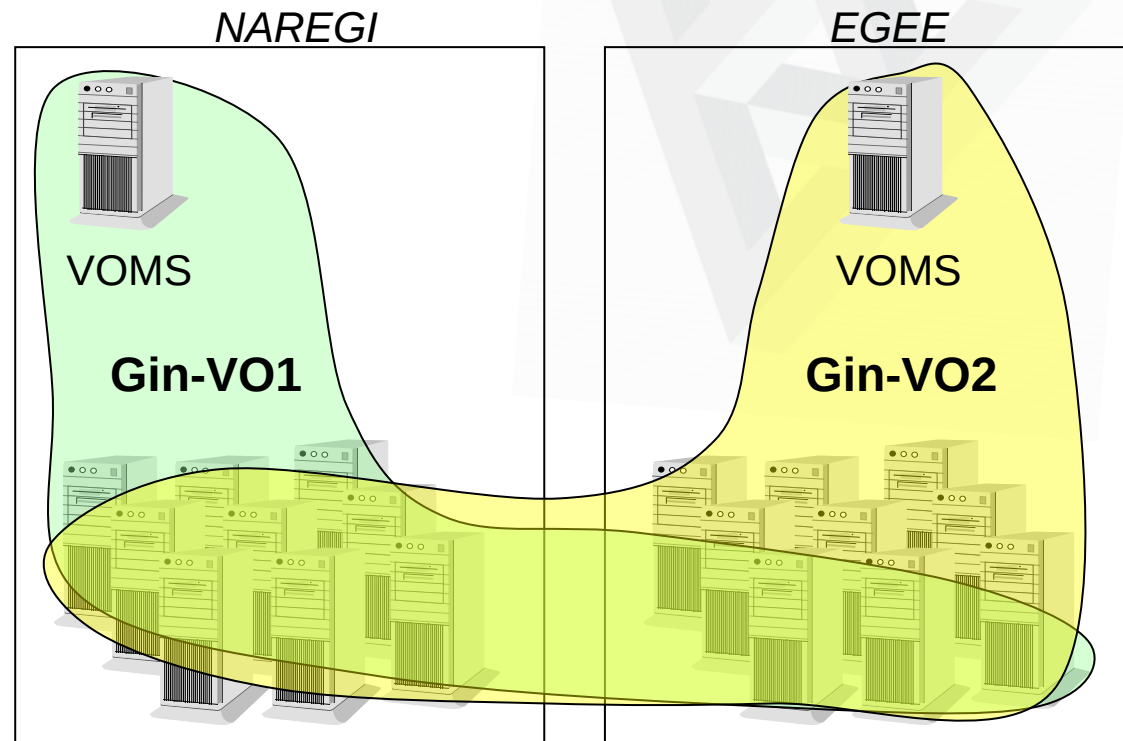
- ❖ Authentication is via x509 credentials
- ❖ Credentials used should come from Certification Authorities recognized by the IGTF
- ❖ Authorization attributes (if any are recognized) are transmitted via VOMS extensions to the x509 credentials
- ❖ VO Naming convention is described in the GIN VO Naming document

(from OGF/GIN wiki)

- IGTF is framework of International Grid Trust Federation
- IGTF consists of APGridPMA, EUGridPMA and TAGPMA
- NAREGI CA joined the APGrid PMA
- NAREGI CA has been approved as a production-level CA by APGridPMA
- GSI compliant x.509 proxy certificates for authentication
- User who have Certificate issued by NAREGI-CA participate GIN-VO, and can use Computing resource on GIN



- The GIN VO is a VOMS service
- NAREGI uses VOMS to VO Management
- Transport of supported authorization attributes via VOMS extensions
- VO names are expected to abide by the VO naming conventions describe in draft(GIN VO Naming) in order to avoid name conflicts between grids
- All members of GIN Virtual Organization is apply AUP(Acceptable use policy).



reference

<http://forge.gridforum.org/sf/wiki/do/viewPage/projects.gin/wiki/GINAuth>

Information Services and Schema

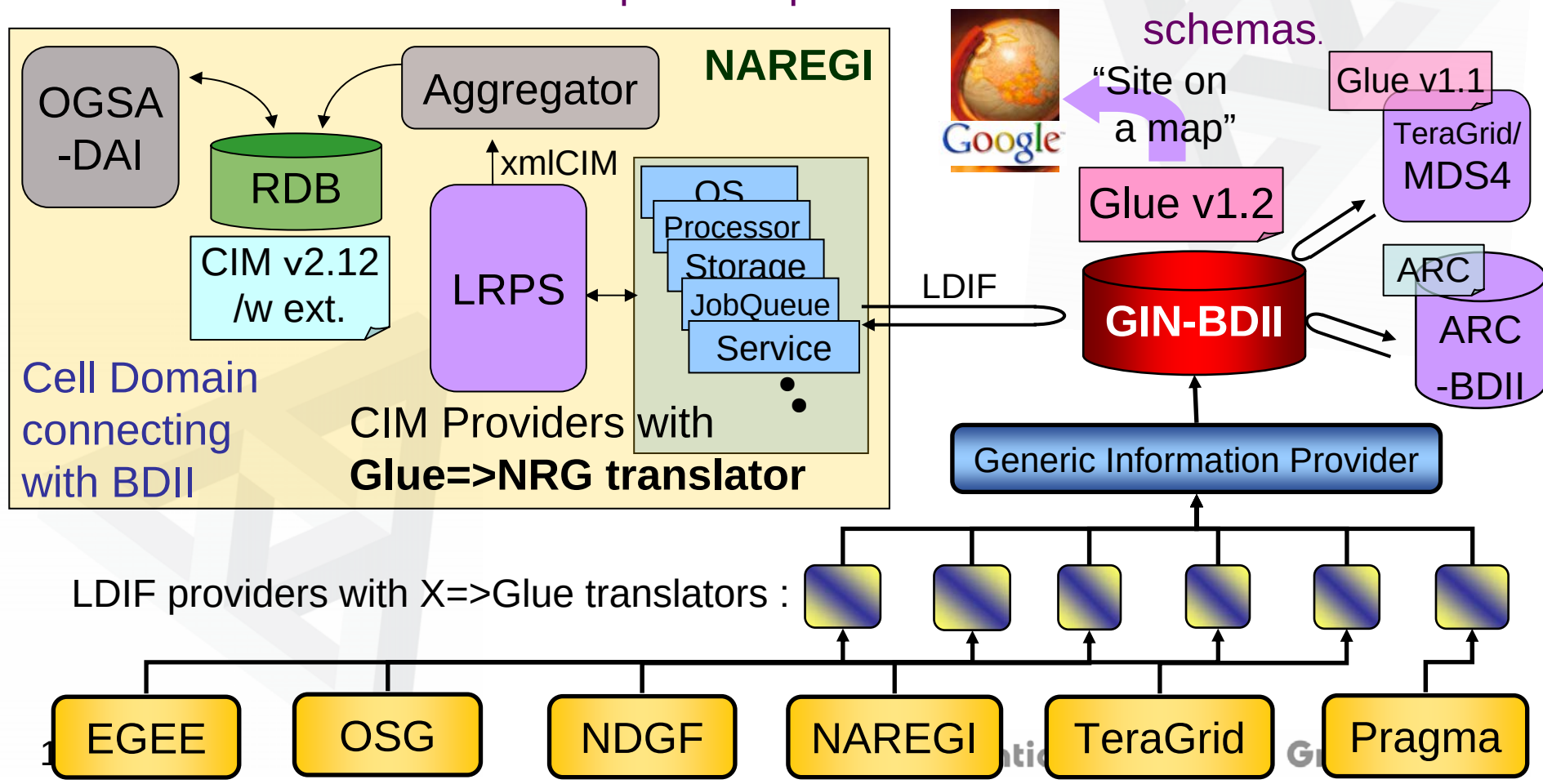
Agreements:

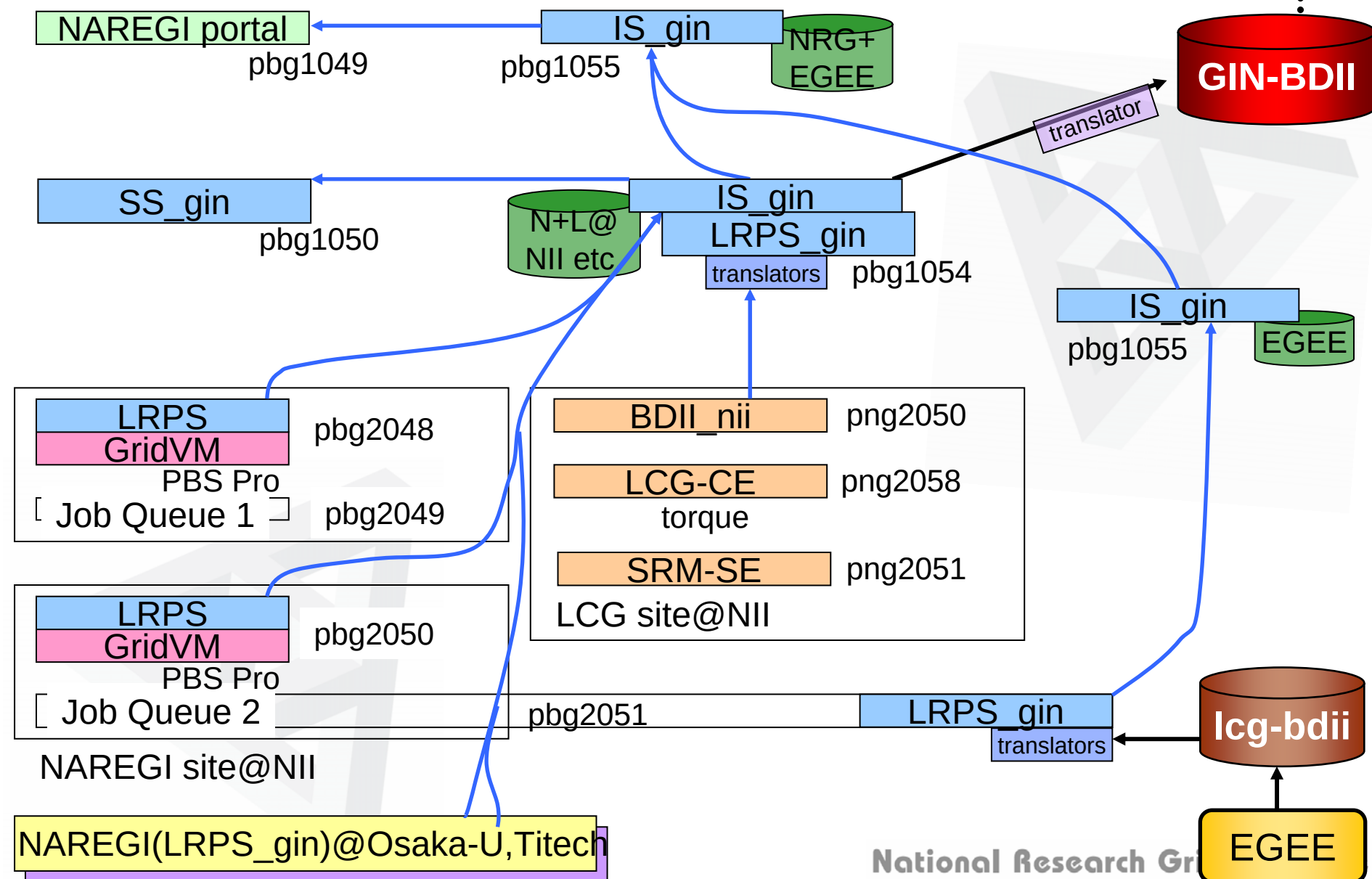
- ❖ Each grid's internal Information system will act as a buffer/translator for accessing information about GIN participating services
- ❖ A subset of the GLUE schema is being used as the common description schema for GIN services

(from OGF/GIN wiki)

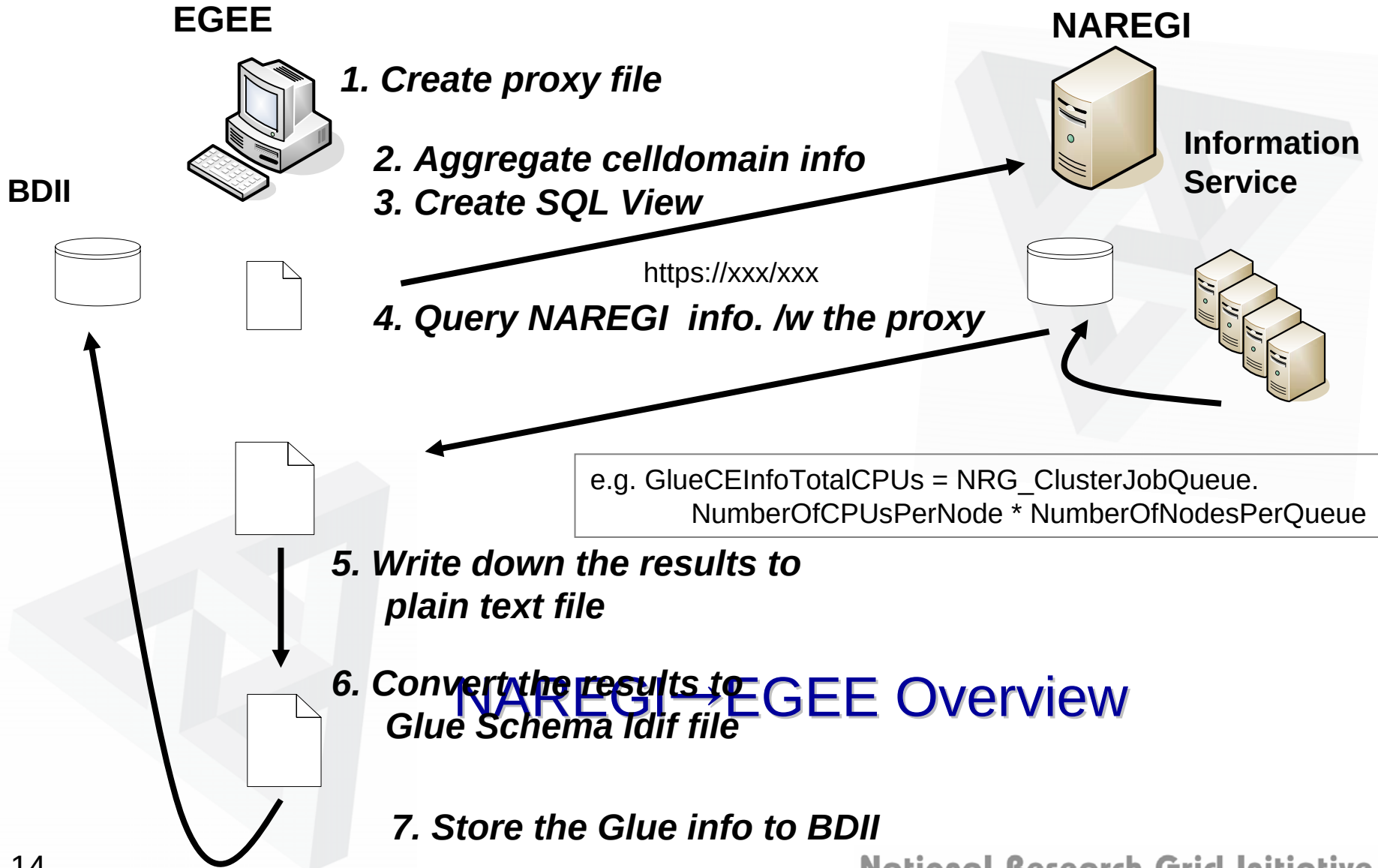
All of grid information can be retrieved by each of grid in its fashion WRT resource description schema, data format, query language, client API, ...

Each information service in grid acts as an information provider for the other and translator embedded in the provider performs conversion between different schemas.

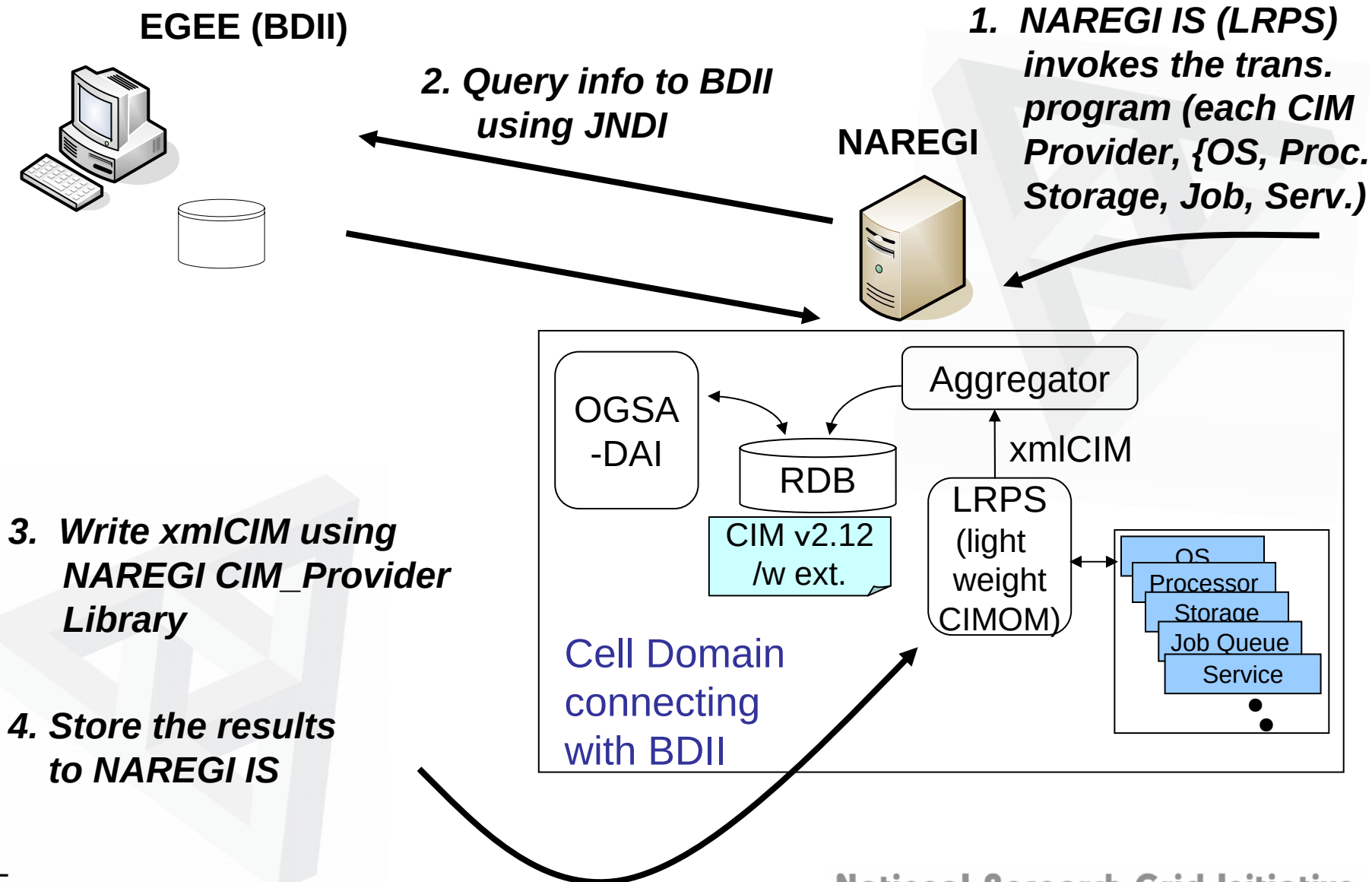




GIN-info: NAREGI → EGEE overview



GIN-info: EGEE → NAREGI Overview



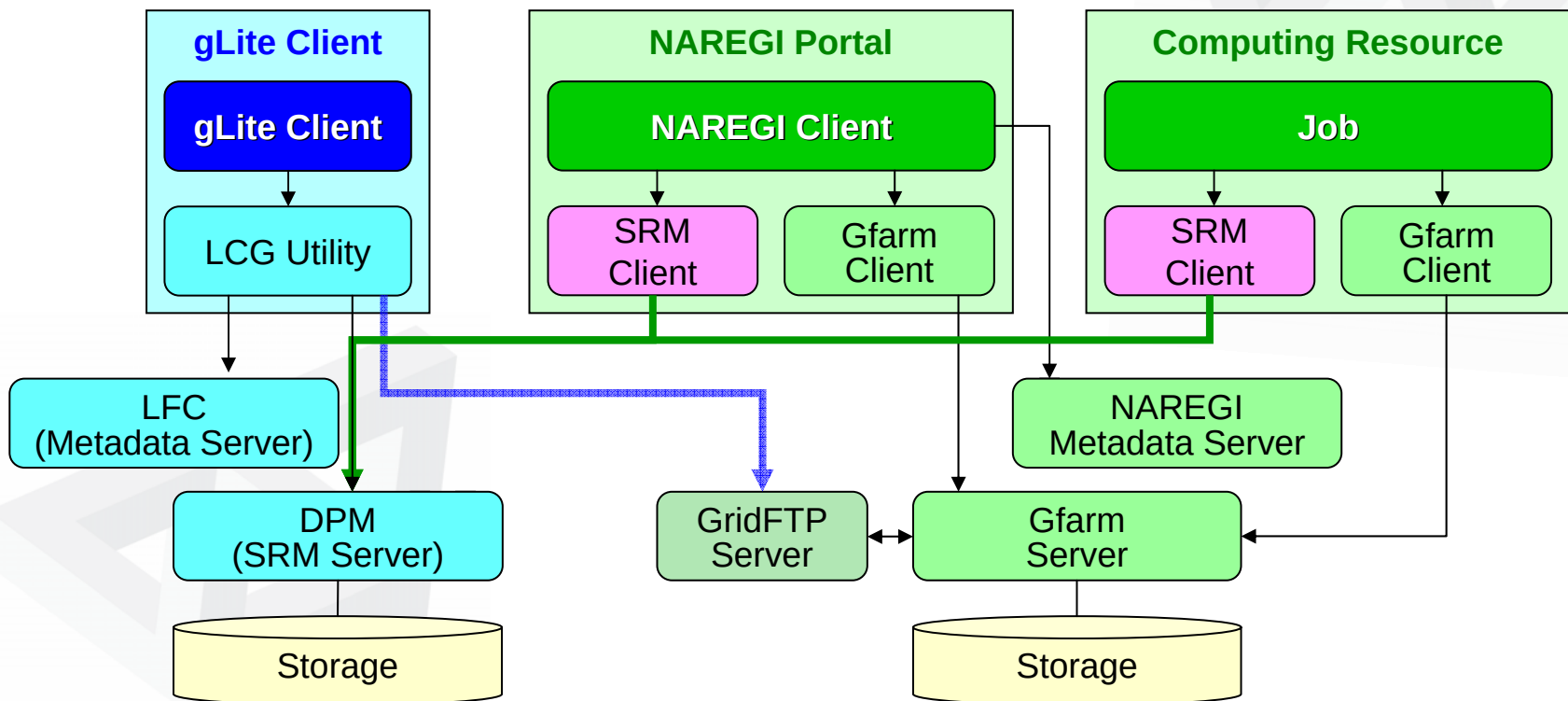
Data Management and Movement

Agreements:

- ❖ Grid FTP is the lowest common denominator for file transfer
- ❖ SRM and SRB islands for data management are being established

(from OGF/GIN wiki)

- Bi-directional file exchange using SRM interface
- GridFTP is used as its underlying file transfer protocol



- NAREGI developed EGEE-NAREGI island as an activity of GIN
 - Bilateral information exchange
 - Bilateral job submission
 - Bilateral file exchange
 - Interoperable security properties
- Next steps
 - Improve interoperation interfaces and functions
 - WS-GRAM, BES, JSDL, ...
 - Grow the island with other EGEE partners
 - KEK will use NAREGI-EGEE interoperation environment for their high energy physics calculations

