Overview and Status of the GridWay Metascheduler

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What is GridWay?

GridWay is a Globus Toolkit component for meta-scheduling, creating a scheduler virtualization layer on top of Globus services (GRAM, MDS & GridFTP)

- For **project and infrastructure directors**
  - GridWay is an open-source community project, adhering to Globus philosophy and guidelines for collaborative development.
- For **system integrators**
  - GridWay is highly modular, allowing adaptation to different grid infrastructures, and supports several OGF standards.
- For **system managers**
  - GridWay gives a scheduling framework similar to that found on local LRM systems, supporting resource accounting and the definition of state-of-the-art scheduling policies.
- For **application developers**
  - GridWay implements the OGF standard DRMAA API (C and JAVA bindings), assuring compatibility of applications with LRM systems that implement the standard, such as SGE, Condor, Torque,...
- For **end users**
  - GridWay provides a LRM-like CLI for submitting, monitoring, synchronizing and controlling jobs, that could be described using the OGF standard JSDL.

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Benefits

Integration of non-interoperable computational platforms (Organization)

- Establishment of a uniform and flexible infrastructure
- Achievement of greater utilization of resources and higher application throughput

Support for the existing platforms and LRM Systems (Sys. Admin.)

- Allocation of grid resources according to management specified policies
- Analysis of trends in resource usage
- Monitoring of user behavior

Familiar CLI and standard APIs (End Users & Developers)

- High Throughput Computing Applications
- Workflows

Features

Workload Management

- Advanced (Grid-specific) scheduling policies
- Fault detection & recovery
- Accounting
- Array jobs and DAG workflows

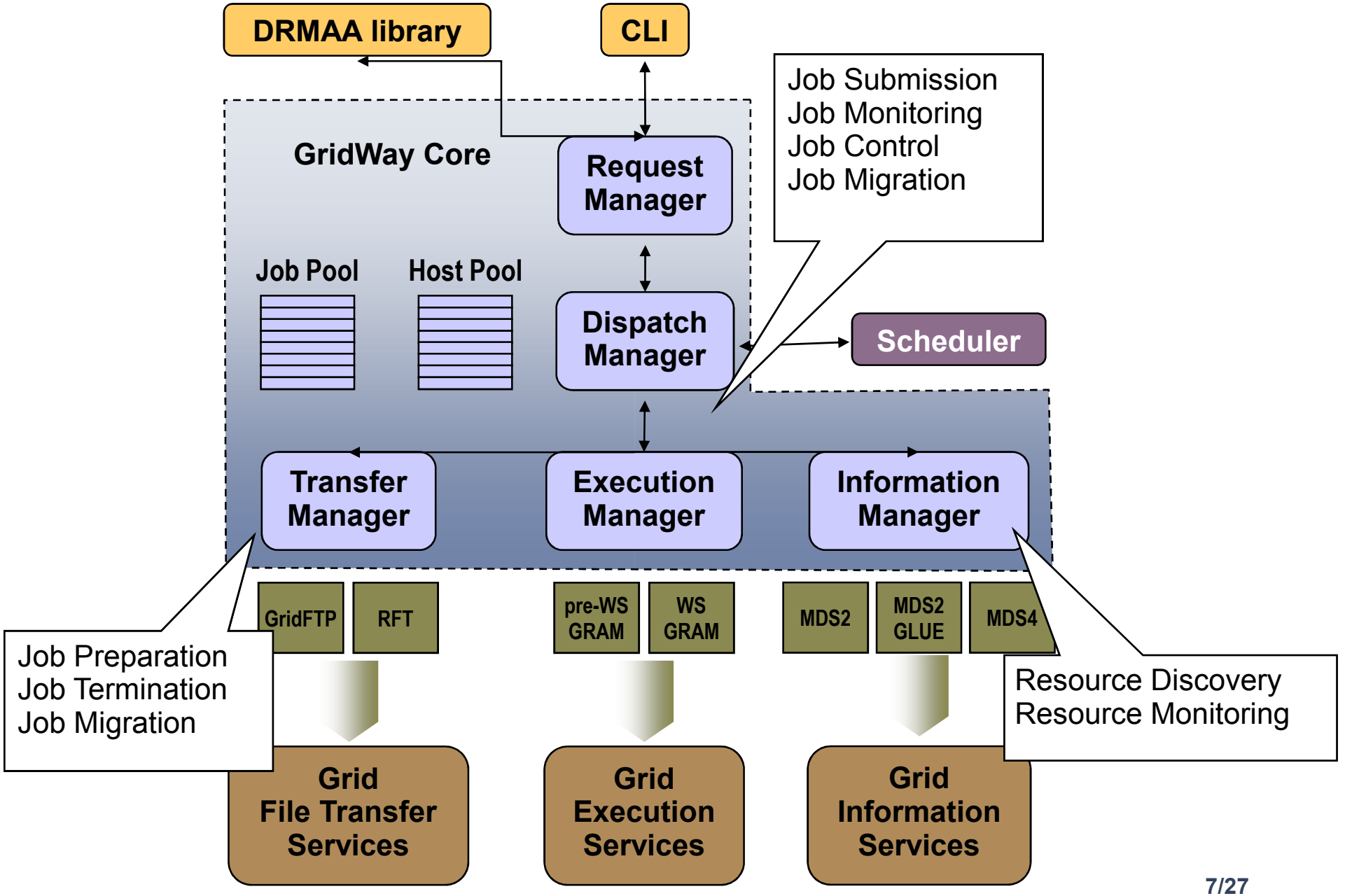
User Interface

- OGF standards: JSDL & DRMAA (C and JAVA)
- Analysis of trends in resource usage
- Command line interface, similar to that found on local LRM Systems

Integration

- Straightforward deployment as new services are not required
- Interoperability between different infrastructures

GridWay Internals



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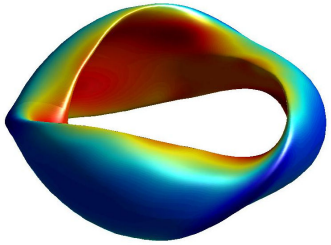
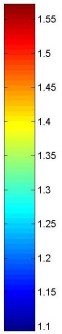
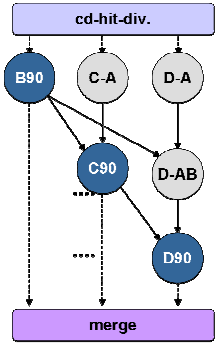
Partner Grids: Examples



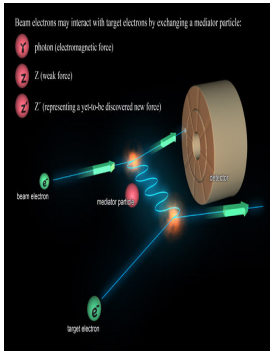
Massive **Ra**y **Tra**cing

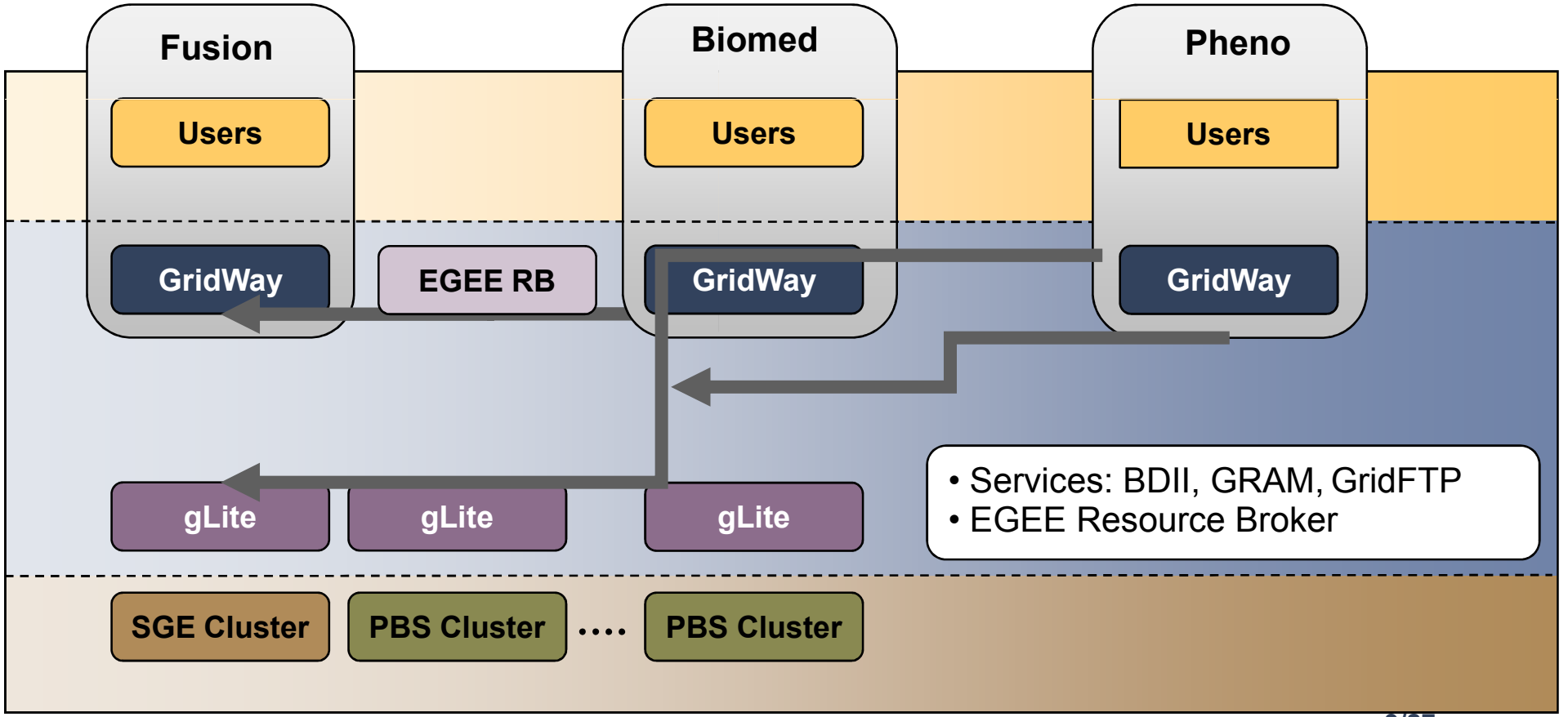


CD-HIT workflow



AITALC code
Bhabha





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Work ongoing on the new version 5.6

Bug fixing campaign

- Annoying (check proxy) when proxy is there
- Capture complete `HOSTNAMES` for messaging
- Include full `QUEUE_ACCESS` info for all VOs
- ...

LDAP server discovery

- Faster and unique resource discovery

Output of cli available in XML format

- Allowing easy implementation of add-ons
- Following a well-defined XML Schema (validation)

Google Summer of Code 2009 projects

2 accepted project within the Globus Alliance

Three-month projects to develop and learn open source code

- **GUI for GridWay**
  - Developed by Srinivasan Natarajan (mentor J.L Vazquez-Poletti)
  - Easy to use GUI
  - Based on GTK+
  - Expected to provide full cli features
- **GridWay + GoogleMaps mashup**
  - Developed by Carlos Martín (mentor A. Lorca)
  - Information from GridWay output geolocalized
  - Based on Google Web Toolkit
  - Expected to show real-time status

New web page design

A renovated web portal has been designed

According to the new image emerging at dsa-research.org

- **Simplify** user interaction
- Find out the content **faster**
- Paying attention to improve the existing **good documents**
- To be **launch soon (order of magnitude of weeks)**
- **New development** portal
- **Keep tuned!**

Thank you for your attention!