Globus Toolkit version 4

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Acknowledgements

These slides were taken from Talks given by Carl Kesselman and Jennifer Schopf of the Globus Team
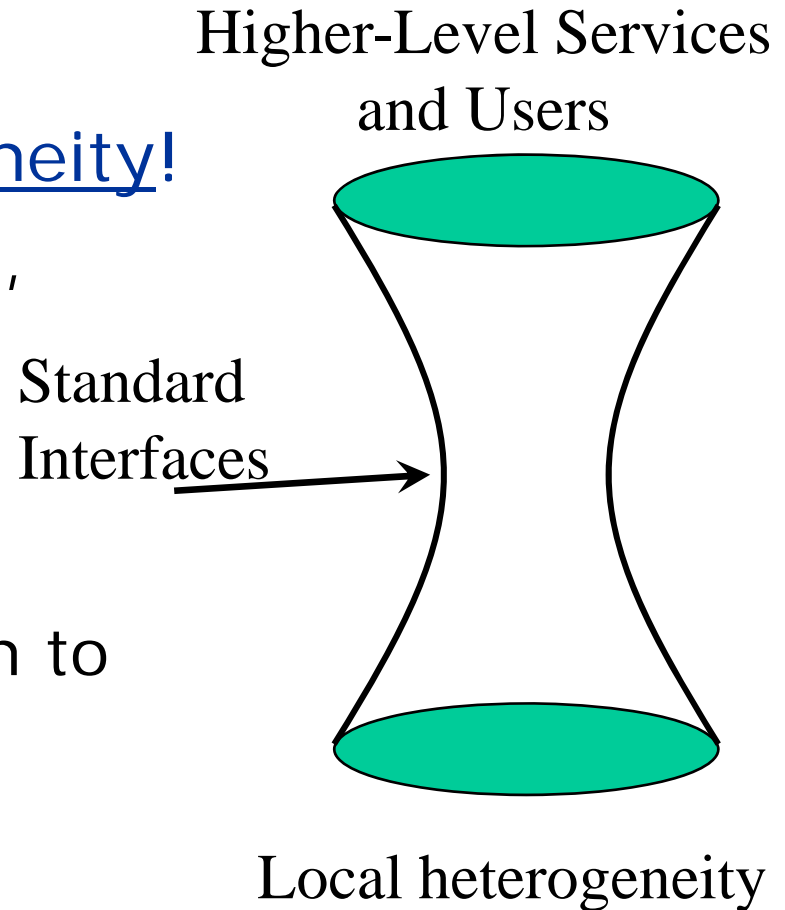
The Role of Globus

- A collection of solutions to problems that come up frequently when building collaborative distributed applications
- Heterogeneity
  - **A focus, in particular, on overcoming heterogeneity for application developers**
- Standards
  - **Capitalizes on and encourages use of existing standards (IETF, W3C, OASIS, GGF)**
  - **GT also includes reference implementations of new/proposed standards in these organizations**
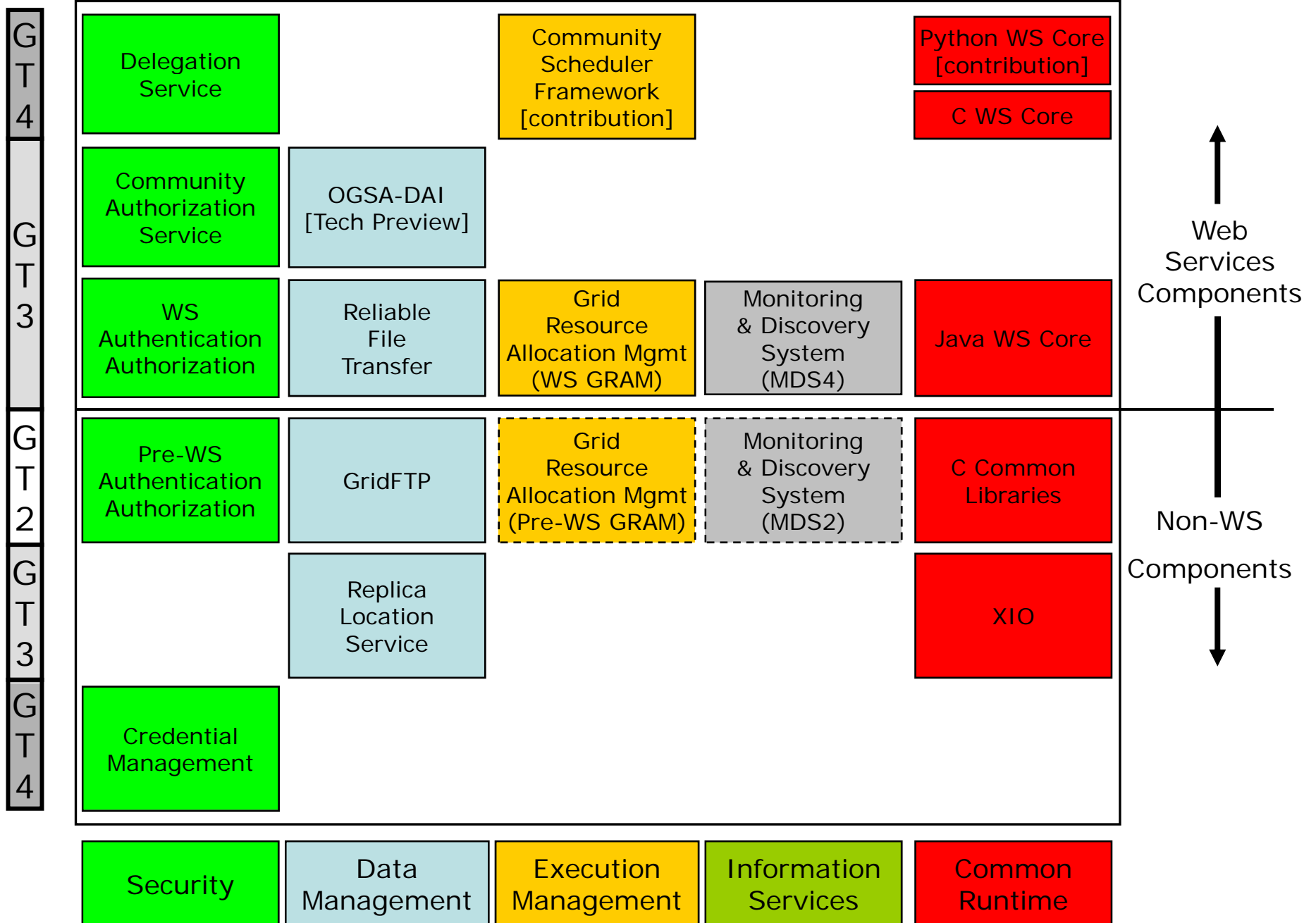
Globus is an Hour Glass

- Local sites have their own policies, installs – <u>heterogeneity</u>!
  - Queuing systems, monitors, network protocols, etc
- Globus unifies – <u>standards</u>!
  - Build on Web services
  - Use WS-RF, WS-Notification to represent/access state
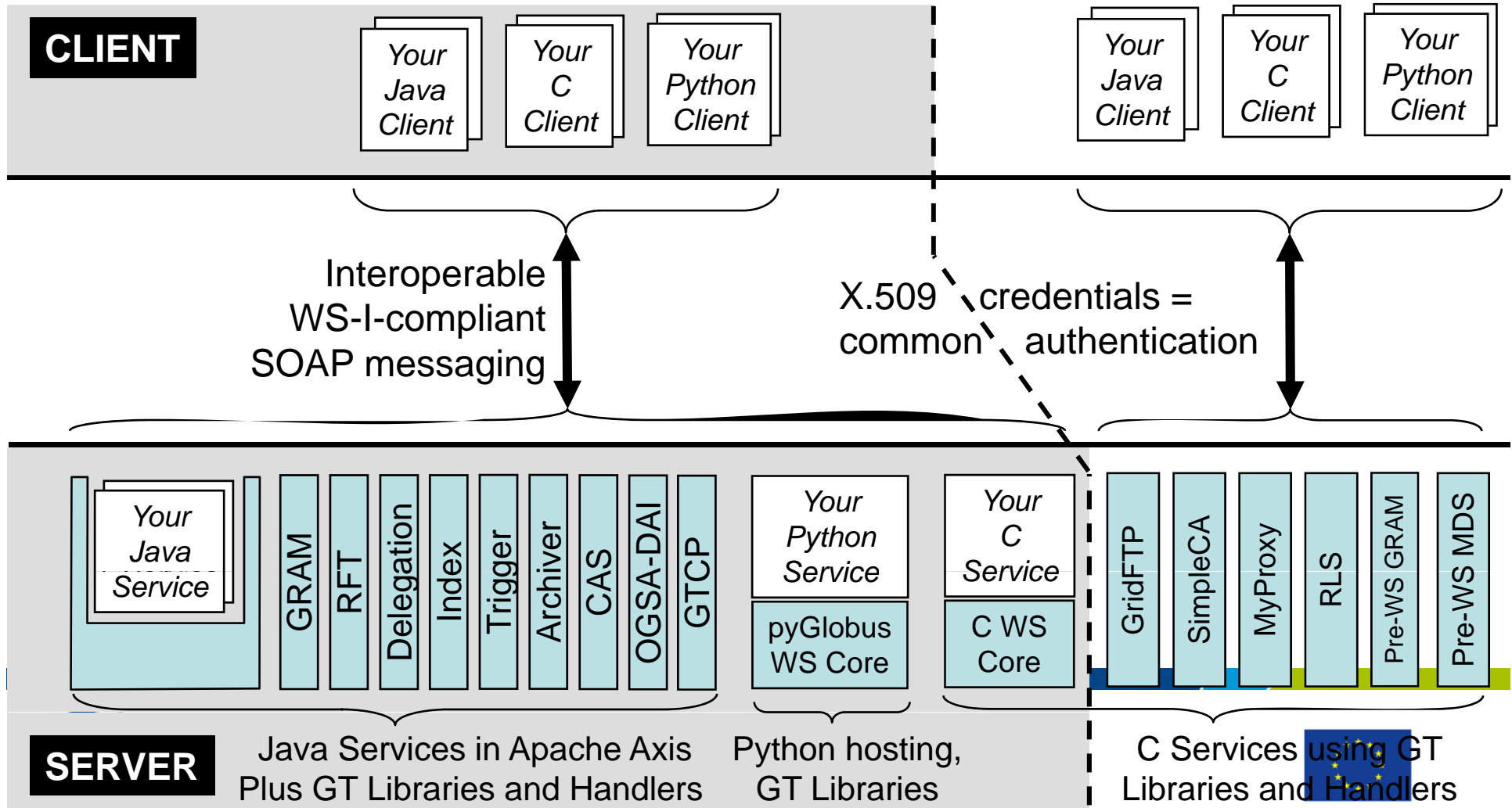 - Common management abstractions & interfaces

Higher-Level Services and Users

Standard Interfaces

Local heterogeneity

4

Globus Open Source Grid Software

GT4	Delegation Service		Community Scheduler Framework [contribution]			Python WS Core [contribution]
						C WS Core
GT3	Community Authorization Service	OGSA-DAI [Tech Preview]				
GT3	WS Authentication Authorization	Reliable File Transfer	Grid Resource Allocation Mgmt (WS GRAM)	Monitoring & Discovery System (MDS4)		Java WS Core
GT2	Pre-WS Authentication Authorization	GridFTP	Grid Resource Allocation Mgmt (Pre-WS GRAM)	Monitoring & Discovery System (MDS2)		C Common Libraries
GT3		Replica Location Service				XIO
GT4	Credential Management					

Web Services Components

Non-WS Components

Security	Data Management	Execution Management	Information Services	Common Runtime

GT2 vs GT4

- Pre-WS Globus is in GT4 release
  - **Both WS and pre-WS components (ala 2.4.3) are shipped**
  - **These do NOT interact, but both can run on the same resource independently**
- Basic functionality is the same
  - **Run a job**
  - **Transfer a file**
  - **Monitoring**
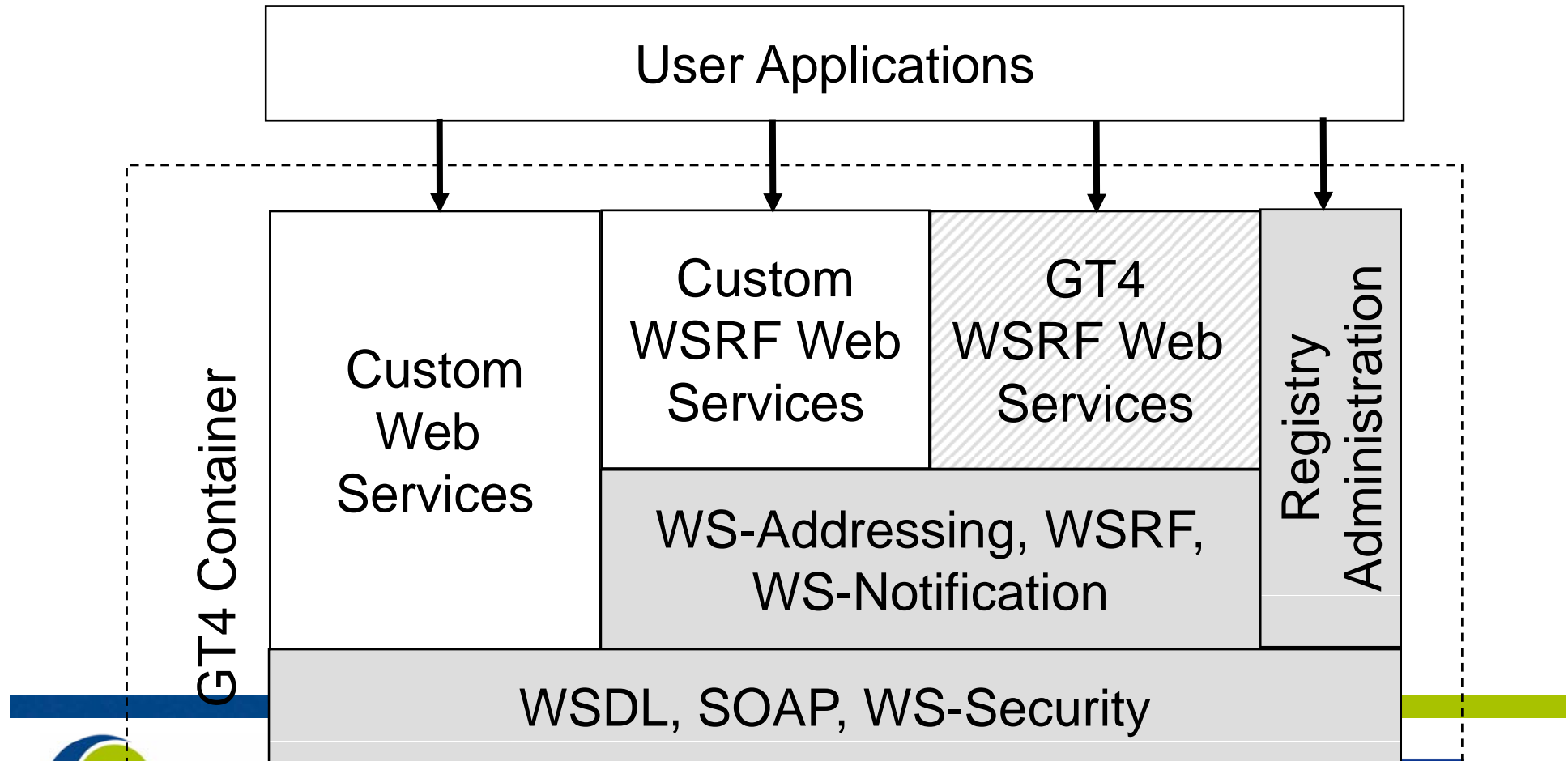 - **Security**
- Code base is completely different

GT4 Components

Pre-WS GRAM

- **globus-job-submit <contact string> <executable>**
  - Contact string identifies host & queue for submitting job.
  - Returns URI used by subsequent commands to identify your job. (Not a URL)
    - **e.g. https://crockett.epcc.ed.ac.uk:43839/16639/1183992570/**
- **globus-job-status <URI>**
  - Get status of job identified by URI
- **globus-job-get-output [-err] <URI>**
  - Get standard output (/error) of job identified by URI

GT4 Web Services Core

User Applications

GT4 Container

Custom Web Services

Custom WSRF Web Services

GT4 WSRF Web Services

Registry Administration

WS-Addressing, WSRF, WS-Notification

WSDL, SOAP, WS-Security

omiieurope
open middleware infrastructure institute

EU project: RIO31844-OMII-EUROPE

Tutorials

1. **pre-WS GRAM using EPCC EI cluster**

   http://homepages.nesc.ac.uk/~gcw/OMII_Europe/jobs.html

2. **WSRF service development**

   http://homepages.nesc.ac.uk/~gcw/OMII_Europe/WSRF.html