

# Astronomical Grid Computing Community

## Astro-RG Meeting @ GGF10

### Agenda

- Welcome (Nic Walton, Cambridge, AstroGrid Project Scientist)
- Actions Resulting from GGF9
- Initial assessment of Virtual Observatory Needs
  - Mapping to the GGF process
- Workshops
  - GGF 10: Data Area Workshop
  - GGF 10: Applications Workshop
  - Future Astro-RG/ Virtual Observatory workshop

# GGF Intellectual Property Policy

- I acknowledge that participation in GGF10 is subject to the GGF Intellectual Property Policy.
- Intellectual Property Notices Note Well: All statements related to the activities of the GGF and addressed to the GGF are subject to all provisions of Section 17 of GFD-C.1 (.pdf), which grants to the GGF and its participants certain licenses and rights in such statements. Such statements include verbal statements in GGF meetings, as well as written and electronic communications made at any time or place, which are addressed to: the GGF plenary session,
  - any GGF working group or portion thereof,
  - the GFSG, or any member thereof on behalf of the GFSG,
  - the GFAC, or any member thereof on behalf of the GFAC,
  - any GGF mailing list, including any working group or research group list, or any other list functioning under GGF auspices,
  - the GFD Editor or the GWD process
- Statements made outside of a GGF meeting, mailing list or other function, that are clearly not intended to be input to an GGF activity, group or function, are not subject to these provisions.
- Excerpt from Section 17 of GFD-C.1 Where the GFSG knows of rights, or claimed rights, the GGF secretariat shall attempt to obtain from the claimant of such rights, a written assurance that upon approval by the GFSG of the relevant GGF document(s), any party will be able to obtain the right to implement, use and distribute the technology or works when implementing, using or distributing technology based upon the specific specification(s) under openly specified, reasonable, non-discriminatory terms. The working group or research group proposing the use of the technology with respect to which the proprietary rights are claimed may assist the GGF secretariat in this effort. The results of this procedure shall not affect advancement of document, except that the GFSG may defer approval where a delay may facilitate the obtaining of such assurances. The results will, however, be recorded by the GGF Secretariat, and made available. The GFSG may also direct that a summary of the results be included in any GFD published containing the specification.

GGF Intellectual Property Policies are adapted from the IETF Intellectual Property Policies that support the Internet Standards Process.



# Actions Resulting From GGF9

- GGF9: Astro-RG BOF held to discuss RG Charter
  - GFSG approved (10 Feb 04) the formation of the Astro-RG
  - GridForge: <https://forge.gridforum.org/projects/astro-rg/>
  - Mailing list: [astro-rg@gridforum.org](mailto:astro-rg@gridforum.org)
  - Website URL: <http://www.ivoa.net/astro-rg>
- Co-Chairs: Nic Walton [naw@ast.cam.ac.uk](mailto:naw@ast.cam.ac.uk) & ??
- Secretary: Guy Rixon [gtr@ast.cam.ac.uk](mailto:gtr@ast.cam.ac.uk)
- New GFSG instructions (one chair role/person):
  - Requirement for a new co-chair – volunteer needed

# Astro-RG Web: GridForge + IVOA

- Astro-RG now on GridForge
  - <https://forge.gridforum.org/projects/astro-rg/>
- Use this space for:
  - Document storage
  - Track documents for changes
  - Discussion and Forums
  - Email mailing list archive
- All documents public
  - Sign up as a Project Member to contribute to the GridForge
    - Create new account at  
<https://forge.gridforum.org/account/register.php>
- Informal announcements: 'wiki' <http://www.ivoa.net/astro-rg>

# Requirements capture for Astro-RG

## International Virtual Observatory Alliance – GGF Mapping

- Scope of astronomical community: IVOA
  - But this incorporates majority of important data centres in astronomy
  - Forum for related astronomical communities such as theoretical modelling community
  - Covers cosmology through solar, STP, ionospheric end user communities



# GGF RG/WG's (from PNPA-RG)

	APME					ARCH					DATA							
	ACE-RG	UPDT-RG	GCE-RG	APPS-RG	PG MRG	Policy-RG	NP1-WG	CMM-WG	OGSA-WG	OGSI-WG	SMF-RG	DAIS-WG	DFDL-WG	GFS-WG	GridFTP-WG	CREP-WG	DT-RG	GHPN-RG
Accounting						A												
APIs								A					A					
Architecture						A			A	A	A							
Auditing						A												
Authentication																		
Authorisation						H1												
Browse Grid Resources	H1																	
Computing Element																		
Data Queries												H2	H2	H2				
Dataset access cost																		
Dataset Replication														H1	H1	H1	H1	H1
Datasets													H1	H1				
end-to-end system performance		H2		A	A													A,H2
File Catalogue												A		A		A		
Grid Access Service			A				A											
Grid Monitoring																		
Information Service																		
Interactive activity																		H2
Job execution environment		H1																
job resource estimation																		
Job steering		H1																
metadata	H1											A,H1						
Persistent interactive environment	H2																	
Provenance and logbooks		A,H2																
Quality of Service						H1												
Storage Element														A	A	A	A	
VO-wide Allocation																		
VO-wide Reservation																		
Workload Management System																		

# GGF RG/WG's (from PNPA-RG)

	GRID SEC							ISP						P2P	SRM						
	AuthZ-WG	CACPS-WG	GSI-WG	OGSA AuthZ-WG	OGSA SEC-WG	ARRG-RG	SAAA-RG	CGS-WG	DAMED-WG	NM-WG	GIR-WG	GB-RG	RGIS-RG	OGSA P2P-Security	CDDL-WG	DRMAA-WG	GESAWG	GRAAP-WG	JSDL-WG	RUS-WG	UR-WG
Accounting	A			A			A										A			A	A
APIs																			A		
Architecture				A	A			A						A	A						
Auditing	A			A			A										A			A	A
Authentication		A	A			A	A							A							
Authorisation	A,H1			A,H1			A,H1														
Browse Grid Resources																					
Computing Element																		A			
Data Queries																					
Dataset access cost																	H1			H1	H1
Dataset Replication																					
Datasets																					
end-to-end system performance												A									
File Catalogue																					
Grid Access Service																					
Grid Monitoring									A	A	A		A								
Information Service									A		A		A								
Interactive activity																					
Job execution environment																					
job resource estimation																				H1	H1
Job steering																					
metadata																					
Persistent interactive environment																					
Provenance and logbooks																			A		
Quality of Service																	H2	H2			
Storage Element																		A			
VO-wide Allocation																		H1			
VO-wide Reservation																		H1			
Workload Management System																A,H2			A,H2		

# Gathering requirements

- Initial activities: GGF10 @ Berlin
- Report prepared for: GGF11 @ Honolulu
- Preliminary results:
  - Process defined: IVOA WGs to interact with GGF groups; seeking volunteer co-ordinators
  - Some requirements ex IVOA grid/web-services group
  - Meta-requirements



# Group mapping (1)

<i>IVOA Group</i>	<i>GGF groups</i>	<i>Volunteer?</i>
Resource registry	SMF-RG, RGIS-RG	Ray Plante
Data modelling	DFDL-WG	J. McDowell
UCDs (content desc.)	SEM-RG	Roy Williams, Reagan Moore
Data access layer	DAIS-WG	
VOTable	DFDL-WG	

# Group mapping (2)

Query language	DAIS-WG	
Grid/web services	OGSA-WG, (OGSI-WG), OGSA-SEC-WG, GSI-WG, Auth-WG, AuthZ-WG	GuyRixon
Standards & processes	GFSG Proc-WG	

# Group mapping (3)

VO arch.	OGSA-WG	Reagan Moore, Guy Rixon
VO apps.	Astro-RG, APPS- RG	Tom McGlynn, Kevin Benson
(pipelines, workflow)	GCE-WG, WMF	
(preservation)	PE-WG	



# Requirements ex GWS group (From: Guy Rixon)

- Need to add these aspects to IVOA W/S:
  - State tracking for resources
  - AAA
  - Asynchronous operations + notification
  - Capability discovery
- May later need scheduled resources
  - ⇒ may need transactions/compensation
- Data transport

# Meta-requirements (1)

1. No Grid, no way!

2. Grid throughout.

3. Grid services as leaf nodes.

4. Leaf nodes + pervasive GSI + pervasive GridFTP.

5. Grid only “within” web services

Preferred by GWS-WG of IVOA (options 4 & 5 are not mutually exclusive)



# Meta-requirements (2)

- “Requirement #0: it shall work”
  - Chance of failure of any given use case  $\ll 1\%$
- Need stable specs
  - Multiple prog. toolkits  $\Rightarrow$  work to wire protocol, not to API
  - Standard defined by implementation is no good
- Need implementations designed for production
  - Value ease of use above configurability
  - Require 2 interoperating implementations?



# +ve Impact of WSRF -ve

- Technically better than OGSII
  - More compatible with tools, WS-\*
  - Allows SOAP intermediary
  - Simpler; better factored.
- Implementations:
  - VObs can implement crucial bits
  - commercial implementations
- Loosely coupled to OGSA, GGF
  - Stateful services without reference to GGF/Globus
  - ...but can be interoperable with OGSA.
- GGF in hiatus while WS-RF absorbed
  - E.g. DAIS spec to be rewritten
- Not a standard yet (c.f. OGSII)
  - Not stable
  - No primer yet
- No implementations yet (c.f. OGSII)

# Astro-RG : Implementations

- Example GGF standards based implementations in Astronomy:
  - UK: AstroGrid – GT3 (see <http://www.astrogrid.org> & <http://astrogrid.ast.cam.ac.uk:8080/aad-portal/index.jsp>)
  - Aus-VO
  - USA: NVO (see <http://www.us-vo.org>)
    - JHU: skyquery (<http://www.skyquery.net>)
    - CalTech: mosaicing services (Atlasmaker, Montage)
    - NCSA: Webservice registries
    - SDSC: Sky surveys on the TeraGrid
  - Japan: J-VO (see <http://jvo.nao.ac.jp>)
  - China: China-VO – GT2 base (see <http://www.china-vo.org>)
- Document these experiences

# Astro-RG Timelines

- GGF 11 – Assessment of VObs needs document
- GGF 12/13 – Initial assessment of VO experiences with testbed data grid deployments
- IVOA/GGF Workshop – Sept 2004



# Workshops

- GGF10: Data Area Workshop
  - Report from Reagan Moore
  - Input to the assessment of needs document
- GGF10: Case Studies on Grid Applications
  - APPS-RG, UPDT-RG, GUS-RG, PGM-RG
  - Use cases from Astro-RG to the APPS-RG collection
- GGF11: Possible SEM-RG/APPS-RG WS
  - Metadata issues or relevance to the IVOA
- Future : Joint IVOA/ GGF activity
  - Possibility: India Sept 2004

# Next Steps

- **Sign in:** sheet for this meeting
- **Sign up:** astro-rg @ gridforge
- **Shape up:** read the minutes and materials on grid forge
- **Shout up:** contribute to the IVOA/GGF WG's analysis
- **Show up:** aim to attend GGF 11 @ Honolulu