Astro-RG

- **Officers:** *Nic Walton (IoA, Cambridge)*
      Masatoshi Ohishi (NAOJ, Tokyo, Japan)
      Secretary: Reagan Moore (SDSC)
- **Goals**
  - Capture requirements from IVOA community and map to GGF services
- **Significant Events**
  - Workshop held on May 10, 2006
  - IVOA coordination meeting in Victoria, May 15, 2006
  - IVOA development of:
    - VOSpace specification
    - Event notification specification
- **Concerns/Issues**
  - Need Grid Service implementations that are robust and efficient
  - IVOA implementations being done in parallel to Grid standards
  - Grid standards are falling 2 generations behind

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IVO/Astro Working Group Meeting

- **Action items from AstroRG@GGF16**
  - Review the document
    - **"Building IVOA Services for the Astrophysics Community"**
  - **Public comment is being sought**
    - Document provides the perspective of the IVOA community for the areas of
      - Utility
      - Virtual Observatory requirements
      - Viability
    - Need an assessment from the GGF working groups on their expectations for providing services (both functionality and delivery date)
  - Concern is that IVOA will not wait, will implement before standard is finished.
- **Setup IVOA/GGF workshop - held May 10, 2006**

Building IVOA Services

- **Two active service development efforts are underway in the IVOA Community**
  - VOSpace - provide naming convention for building shared collection
  - VOEvent - provide rapid notification of astronomical events for action by other sites/observatories
- **Development efforts are proceeding in parallel to GGF**

VOSpace Specification

- **Overlaps strongly with**
  - OGSA Data Architecture working group
  - Grid File Systems working group naming
- **Based on registration of links to images in other VOSpaces**
  - Example of federation of name spaces through use of soft links
  - Assumes
    - Common authentication mechanism
    - Local control over authorization
    - Separate data transfer method
    - Standard state information maintained in each VOSpace
      - Owner
      - ACLs
      - Size
      - Creation date
    - Registry for maintaining unique names for VOSpaces

VOSpace: comments from the meeting

- **WS-Naming**
  - Andrew Grimshaw - Guy Rixon contact
  - Is WS-Naming a goer?
  - Differentiation between naming authority (NA), the NA instance, the logical name that one references the file by.
- **Relevance for Chemical Informatics Grid (ex G Fox)**
  - VOTable used there

Current Issues

- **Definition of name space**
  - Separation of VOSpace registered identity from soft link naming
- **Authentication done by home data grid**
  - Simplified management of user identity if Shiboleth style authentication is done.
  - Requires establishment of trust between VOSpace instances so they can forward authentication requests to home VOSpace
- **Standard state information for each soft link**
  - Checksum to validate integrity
  - Timestamp on last validation of integrity
  - Synchronization time stamp
  - Descriptive metadata
- **Standard operations that can be performed on the soft link**
  - Read / Write
  - Metadata read / update
  - Validation

VOEvent Specification

- **Overlaps strongly with functionality of Information Dissemination Working Group**
  - Dependent on ability to interpret contents of event message
  - Uses semantics defined for VO events
    - Uniform Content Descriptors
    - Space Time Coordinate ontology
    - Unique IVO Resource Names for each event - IVORNs
- **Implements infrastructure for managing distribution of events**
  - Author
  - Publisher
  - Repository
  - Subscriber
  - Broker/relay/filter

VOEvent Issues

- **Schemas used to characterize event messages**
  - VOEvent - contains an observation
  - VOEvent Publisher - describes how to subscribe, who is publishing
  - VOEvent Repository - describes whose events are being stored, how to query
  - Author Organization - contact information
  - What are corresponding GGF schema?

- **Event Semantics based on**

<Who>	Author Identification
<What>	Event Characterization
<WhereWhen>	Space-Time Coordinates
<How>	Instrument Configuration
<Why>	Initial Scientific Assessment
<Citations>	Follow-up Observations
<Description>	Human Oriented Content
<Reference>	External Content

VOEvent Challenges

- **Existing event alert networks**
  - **ATEL: The Astronomer's Telegram**
    - http://www.astronomerstelegram.org
  - **CBAT: Central Bureau for Astronomical Telegrams**
    - http://cfa-www.harvard.edu/iau/cbat.html, or
    - http://cfa-www.harvard.edu/iau/DiscoveryInfo.html (discovery schema)
  - **eSTAR: eScience Telescopes for Astronomical Research**
    - http://www.estar.org.uk
  - **GCN: The Gamma-Ray Burst Coordinates Network**
    - http://gcn.gsfc.nasa.gov
  - **rtVO: The real-time Virtual Observatory**
    - http://www.rtvo.net
  - **VOEventNet: US-VO Event network**
    - http://voeventnet.caltech.edu/

VOEvent: Comments from the meeting

- **Use of stds for publish/subscribe**
  - WS-Notification   (ex Globus)
    - Brokered
    - Check Apache
  - WS-Eventing (ex MS)
    - Not brokered
  - OASIS (?) aim to reconcile the above two stds soon
  - GGF probably do not have relevant stds in this area
- **Advice: Geoffrey Fox --> look at the above**
  - Input via Roy Williams
  - JMS
  - Enterprise service bus – MULE (open source)

Steps to Requirements Document

- **Need liaison for promoting response from each of the GGF working groups**
  - Volunteers

- **Need to update the list of active working groups**
  - See following slides

GGF Services

- **Infrastructure Standards Groups**
  - Ipv6
  - Network Measurement
  - Data Transport
  - Grid High-Performance Networking
  - Network Measurement for Applications
- **Data Standards Groups**
  - Data Access and Integration Services
  - Grid File Systems
  - Data Format Description Language
  - GridFTP
  - Grid Storage Management
  - Information Dissemination
  - OGSA Data Replication Services
  - Transaction Management
  - OGSA Data
  - Byte IO
- **3Compute Standards Groups**
  - Grid Resource Allocation Agreement Protocol
  - Job Submission Description Language
  - Grid Scheduling Architecture
  - OGSA Basic Execution Services

GGF Services

- **Architecture Standards Groups**
  - Open Grid Services Architecture
  - Grid Protocol Architecture
  - OGSA Naming
- **Applications Standards Groups**
  - Grid Remote Procedure Call
  - Grid Information Retrieval
  - Distributed Resource management Application API
  - Simple API for Grid Applications
  - Grid Checkpoint Recovery
- **Management Standards Groups**
  - Application Contents Service
  - Configuration Description, Deployment, and Lifecycle Management
  - Grid Economic Services Architecture
  - OGSA Resource Usage Service
  - Usage Record
- **Security Standards Groups**
  - Open Grid Service Architecture Authorization
  - OGSA-P2P-Security
  - Firewall Issues
  - **Trusted Computing**