

Astro-RG: Proposed Global Grid Forum Research Group Charter

Research Group Name:

The Astronomical Grid Community
The research group acronym is “Astro-RG”

Interim Chairs:

Nicholas A Walton, naw@ast.cam.ac.uk
Reagan W. Moore, moore@sdsc.edu

Interim secretary:

Markus Dolensky, mdolensk@eso.org

Mailing List:

General Discussion:

To subscribe: Majordomo@gridforum.org with the text
subscribe astro-wg “your name” <“your E-mail address”>

Archive: <http://www.gridforum.org/>

The Astronomy Research Group web site will be linked from
http://www.gridforum.org/7_APM/APS.htm.

The web site will be <http://www.ivoa.net/astro-rg/> and will contain copies of all working drafts, lists of working group participants, and lists of current working group activities.

Draft Charter for the Astronomy focused GGF Research Group

The Astronomy Research Group explores issues related to the use of Grid technology in support of astronomical data collections and data analysis pipelines. The Astronomy Research Group is supported by the International Virtual Observatory Alliance, a partnership of Virtual Observatory (IVOA) projects from across the globe. The term VO references Virtual Observatories, rather than Virtual Organizations. However, a Virtual Observatory is a Virtual Organization of diverse, distributed partners.

The astronomy community assembles and publishes large heterogeneous image collections, and uses catalogs to manage information content defined within the collections. The collections evolve in time and include temporal and spatially correlated data. The IVOA has led the development of unifying services for access to these distributed collections. The services are implemented on top of grid technology.

The IVOA is extending relevant data collections to include simulation output, spectral data, solar physics collections, and observational data from all accessible wavelengths of light. The size of the collections is currently on the order of 10 TBs per site, but the sizes will grow to the petabyte scale for synoptic surveys. Hence scalable grid technology is needed for managing large scale collections.

The analysis of IVOA collections requires grid technology to support data intensive computing. Examples are the reprojection of every pixel within a 10-TB image collection to build a scientific quality mosaic.

The IVOA is promoting the implementation of uniform grid technology across all major astronomy collections. Participants include: NVO (US), AVO (Euro-VO), Astrogrid (UK), VO-Japan, CVO (Canada), India-VO, China-VO, Australia-VO, Russia-VO, GAVO (Germany), DRACO (Italian), VO-Korea, etc.

The Astro-RG will be supported by the International Virtual Observatory Alliance and its constituent partners. The IVOA is the global forum within which standards applicable to the astronomy application domain are developed and agreed. Common mechanism, protocols, and services are identified for use within the IVOA community. These in turn underpin the development of the virtual observatory infrastructure, which enables massive scale access and analysis from distributed collections by the astronomical community.

Specific topics of interest include:

- Development of unifying services architecture for data analysis, access, and manipulation
- Development of data model standards
- Federation of heterogeneous resources
- Scalability to petabyte collections
- Integration of portals, data processing pipelines, web services, grid technology

The activities of the Astro-RG will focus on:

- Identification of the capabilities required to implement VO data analyses and data management
- Evaluation of the effectiveness and performance of grid technologies as used within the community
- Promotion of GGF standards for use within the IVOA community.

Deliverables:

- Document on astronomical requirements for grid technology, based on an assessment of existing systems
- Document on the performance and use of grid technology within VOs

Goals/Milestones:

GGF9 (Oct 5-9 2003):

Discuss research group charter, define process for creating documents

GGF10 (March 7-10 2004)

Initial assessment of capabilities required by VOs

GGF11 (June 6-9 2004)

Initial assessment of VO experiences with testbed data grid deployment

GGF12 (October 2004)

Final draft of the requirements assessment document

GGF13

Final draft of the experiences assessment document.

Leadership Committee:

Chenzhou Cui, China-VO (BAO, China), ccz@bao.ac.cn
Francoise Genova, France-VO (CDS, France), genova@astro.u-strasbg.fr
Robert Hanisch, NVO (STScI, USA), hanisch@stsci.edu
Sang Chul Kim, KVO (KAO, Korea), sckim@kao.re.kr
Andrew Lawrence, AstroGrid (IfA, Edinburgh, UK), al@roe.ac.uk
Ajit Kembhavi, VO-India (IUCAA, India), akk@iucaa.ernet.in
Tony Linde, AstroGrid (Leicester, UK), ael@star.le.ac.uk
Oleg Malkov, RVO (INASAN, Russia), malkov@inasan.ru
Reagan Moore, NVO (SDSC, USA), moore@sdsc.edu
Ray Norris, Aus-VO (ATNF, Australia), rmorris@atnf.csiro.au
Masatoshi Ohishi, JVO (NAOJ, Japan), masatoshi.ohishi@nao.ac.jp
Fabio Pasian, DRACO (OAS, Italy), pasian@ts.astro.it
Peter Quinn, AVO (ESO), pjq@eso.org
David Schade, CVO (CADC, Canada), David.Schade@nrc.ca
Wolfgang Voges, GAVO (MPG, Germany), wvoges@mpe.mpg.de
Nic Walton, AstroGrid (IoA, Cambridge, UK), naw@ast.cam.ac.uk

Interim Document Committee Participants include:

Francois Bonnarel, bonnarel@astro.u-strasbg.fr
Marcus Dolensky, mdolensk@eso.org
Pat Dowler, Pat.Dowler@nrc.ca
Tony Linde, ael@star.le.ac.uk
Reagan Moore, moore@sdsc.edu
Masatoshi Ohishi, masatoshi.ohishi@nao.ac.jp
Guy Rixon, gtr@ast.cam.ac.uk
Andre Schaaff, schaaff@astro.u-strasbg.fr
Nicholas Walton, naw@ast.cam.ac.uk
Roy Williams, roy@cacr.caltech.edu

Nicholas Walton
Regan Moore

28 July, 2003