

Access Grid Retreat 2008 Report

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The AG Retreat 2008 was held on 28–30 May at Simon Fraser University, Vancouver.

This Retreat is an annual event attended by Access Grid (AG) users, developers and researchers. There were presentations suitable for people at all levels of AG technical expertise, from first time AG users to developers in collaborative technology and streaming media. Bill Blyth from AMSI attended and gave a talk on *Australian national collaborative teaching of advanced maths via AG*.



Bill Blyth attending a Jason Bell workshop at the AG Retreat 2008, Simon Fraser University, Vancouver.

The venue was the main lecture theatre and Access Grid Room (AGR) at The IRMACS Centre. This easily accommodated the 50 attendees and provided an impressive environment, with all chairs equipped with power for laptops. IT support was provided to assist all of those who wished to gain wireless connectivity to the internet. All speakers had been asked to prepare pdf slides for their presentation and to make these available one week before the conference. The abstracts and many of the pdf slides for the presentation were on the website before and during the Retreat. Not only did attendees sometimes check their email, but did web searches on the topic under discussion and entered into lively and particularly well-informed discussions at the end of presentations.

A copy of the Retreat program, as a pdf file, and abstracts and slides (a few of which are quite large files, that is, about 50 MB) from the speakers are available at <http://www.accessgrid.org/retreat/2008/program>.

The only time that the Retreat split into parallel sessions was for the concluding AG Hands-On sessions: one for users and one for developers. All presentations

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covered a wide variety of topics from the perspectives of both users and developers: this provided a great environment for both groups to learn from each other and share ideas.

The keynote address was *Can AG meet the challenges of virtual prototyping?* by Pierre Boulanger, Director of the Advanced Man-Machine Interface Laboratory, University of Alberta. Several examples were given, including the Virtual Analysis of a Francis Turbine at 'La Herradura' in Colombia: a collaboration (using computational fluid dynamics simulation) between agencies in Columbia and universities in Canada and Switzerland. Work on a Virtual Wind Tunnel and modelling low altitude airflow over Mount St Helens involved using the computing power of West-Grid and the AG communication and collaboration tools at each of the research nodes. Pierre commented about remote collaboration using the AG and reported on progress towards developing the next generation of the Tele-Presence System.

Tom Uram, from the Argonne National Laboratory (the originator of the AG), gave an address on the *State of the Access Grid*. The number of AG nodes continues to increase and the AG continues to advance into new domains. Tom was pleased to note the high number of developers attending the Retreat. The new AG release, version 3.1, includes many improvements, increased stability and bug fixes: it is now (almost) of production quality and all AGRs should be using this version.

A lot of work has been done to collect all the AG software and documentation together on the website <http://www.accessgrid.org/>, which includes a very nice installer for Windows (http://www.accessgrid.org/project/easy_setup). This is really lovely (works a treat!): it installs all the needed software in the required version (AG is very sensitive to having exactly the specified version of the various software components). This assumes you have a Windows machine (whether a laptop or full AGR). With a Mac this process takes a little longer, but you can find lots of guides and tutorials from <http://www.accessgrid.org/documentation>.

Piers O'Hanlon from University College London presented *The AVATS and SUM-OVER projects: The media tools continue*, which improved the media tools VIC (video) and RAT (audio) so that the Access Grid Toolkit could use H.264 video compression and be viewed with the IOCOM software. Many, but not all, problems with RAT have been resolved. Piers asked that all RAT problems and failures be reported to his group. Michael Miller gave an informative and entertaining presentation (complete with audio effects) on *Quality Audio for the Access Grid*.

Jason Bell from Central Queensland University presented *The Global Quality Assurance Program for the Access Grid* and is leading this international project. The QA process should be undertaken by all AGRs in order to minimise technical difficulties. Ian Dennell from the Access Grid Support Centre, University of Manchester, talked about *Testing Access Grid at the Access Grid Support Centre* and the soon-to-be-released AGCheck system which provides automatic testing for the AG.

Many more technical topics included recording of AG sessions, the AG in visualisation and high definition developments using AG. Topics which may be of particular interest to users include the following:

- Some innovative projects outside of science are being undertaken via AGRs: for example choreography for dance and master classes in music. *Connecting dancers — remote choreography* was presented by Tobias Schiebeck from Research Computing at the University of Manchester. This was an interdisciplinary project where the e-Science technologies had to be modified to enable use by choreographers: video needed to be of high quality with more control of video windows (position, sizes and transparency), and importing of common video formats and storage were required.

Frédéric Lesage, London School of Economics and Political Science and Multimedia Art Research Centres and Electronic Laboratories (MARCEL), presented *Examining the use of experimentation: artists' networks and the Access Grid*. The MARCEL Network is a group of like-minded artists and scientists who want to create a permanent broadband network for artistic experimentation. The presentation examined how the group created spaces for experimentation using the AG and how they developed relationships with academic institutions to test the application of the AG as a platform for artistic performances: an example was of master classes in music (piano). This demanded high quality audio.

- *Using the AccessGrid to conduct interviews about NSF funded research*. The National Science Foundation configured a studio in the University of Illinois' National Center for Supercomputing Applications (NCSA) ACCESS to utilise AG technology for remote on-camera interviews with NSF funded researchers in the field. This is for the purpose of communicating information about activities, programs and research results of the NSF.
- Paul Mercer, from the Arctic Region Supercomputing Center, presented the *ARSC Remote Control Device Project*. Currently the project consists of three remote controlled robots, a 4' × 8' two-level table and a task to be performed. Demonstrations have been made to many groups at local and remote events, including outreach programs to schools in the Fairbanks area, over the past year.
- Todd Zimmerman from WestGrid, Simon Fraser University, presented *The logistics of running an AccessGrid-based seminar series on a national level*. Over the past three years, WestGrid has hosted over 90 AG seminars (involving up to 10–15 sites) and have learned a great deal about managing both the administrative and technological aspects of such events. This talk discussed experiences of hosting the WestGrid Seminar Series and the Coast to Coast Seminar Series and offered some advice for other groups planning on attempting such a series. In terms of future plans, some thoughts were offered on how the seminar series could be expanded to become an AG seminar series on a global level.

Jonathan Borwein [1, Chapter 2] gives a comprehensive review of the background, history and practice of the Canadian AG coast-to-coast seminar series. You can find the chapter online at <http://users.cs.dal.ca/~jborwein/c2c.pdf>

in colour, and <http://users.cs.dal.ca/~jborwein/c2c08.pdf> in black and white with a useful appendix ‘Guidelines for Managing a Distributed Seminar’.

- Brian Corrie from WestGrid, Simon Fraser University, presented *The Social Dynamics of Scientific Collaboration*. Firstly, the design, implementation, and usage trends over the past three years of the IRMACS Centre’s collaboration infrastructure were discussed. Secondly, a detailed study arising from observations of an active research group was presented. Over five months, 18 hours of meetings were recorded. A careful analysis of the use of gestures was completed and has been published [2].

For all those involved with the Access Grid, whether as a user or developer, participation at an AG Retreat is greatly recommended.

References

- [1] Borwein, J., Rocha, E.M. and Rodrigues, J.F. (Editors) (2008). *Communicating Mathematics in the Digital Era*. AK Peters.
- [2] Corrie, B. and Storey, M.A. (2007). Towards understanding the importance of gesture in distributed scientific collaboration. *Internat. J. Knowledge Informat. Systems* **13**(2), October 2007, Springer.



Bill Blyth is Associate Professor (Adjunct) of computational mathematics at RMIT University and was Head of the Department of Mathematics for $6\frac{1}{2}$ years. He is Chair of the Engineering Mathematics Group of Australia, a Centre Affiliate at the International Centre for Classroom Research (at the University of Melbourne), led the design, construction and initial delivery phases of the RMIT University AGR and is currently at The Australian Mathematical Sciences Institute, AMSI, as the national coordinator of AMSI’s Access Grid Room project. His PhD was in theoretical physics at Imperial College, London. He has an unusually broad range of research interests in mathematics education (in technology-rich classrooms) and the numerical solution of differential and integral equations. He has published more than 60 refereed papers.