

**ATNF ATUC MEMORANDUM**

**To:** ATUC  
**From:** Neil Killeen  
**Date:** 25 November 2004  
**Subject** **Marsfield Scientific Computing Group Report**

**1) Personnel**

Wim Brouw has now departed ATNF to return to the Netherlands where he will take up a joint position with the University of Groningen and ASTRON. Wim will continue to support his AIPS++ software. Wim has made many very valuable contributions to ATNF, including fundamental components of AIPS++ and ATOMS, as well as his tireless international astronomy software efforts (ESO, LOFAR, ALMA, SKA). Wim also did a lot of mentoring and he will be missed.

We have been fortunate to secure the services of Tim Cornwell starting at ATNF in April 2005. Tim's role will be to 1) lead the post-correlation software development for NTD, 2) provide generic synthesis algorithm development leadership and 3) to provide generic synthesis support

**2) CSIRO IT**

CSIRO has undergone a major transition in IT support. IT support is now delivered largely (i.e. not all IT is delivered through CSIRO IT) through one entity, CSIRO IT. A pilot was undertaken in the Sydney basin plus Newcastle. Its purpose was to introduce the new structure, new centralized service desk and to begin work on all of the activities to make the new structure work. The pilot is now concluding with many lessons learned and much hard work from all of the people involved (CSIRO IT and divisional). The next phase will begin soon and by February, it is expected that all of CSIRO will have transitioned to the new CSIRO IT structure.

The ATNF has established a good working relationship with our CSIRO-IT 'Client Services Manager'; on a weekly basis, ATNF issues are discussed and tracked.

An issue that ATUC has raised previously is that of ssh access at ATNF being upgraded to ssh2. I initiated a project last year with the CTIP Computer Services Group to undertake Solaris upgrades in which ssh would be automatically upgraded. This project floundered, despite my best efforts, when CSIRO IT came into being. I have recommenced this project within CSIRO IT and action is now occurring. My goal is to fast track the upgrade of Venice, our major gateway so that ssh2 is available. At the time of writing, a planning meeting is scheduled for the week before ATUC and I will be able to update you a little more in person.

**3) Computing Infrastructure Upgrade**

We are in the final stages of configuring two new Linux compute servers with 3Tb of disk storage. Work finalizing this has been impacted by the ATCA archive project which took priority. The new machines should be available by the time ATUC meets.

We are also deploying a machine to handle most of our VO-services needs. This machine will run RVS, the pipeline and web services. Its deployment has also been impacted on by the archive work. But we are also hopeful it will have been deployed by the time ATUC meets.

**4) AIPS++ International Collaboration**

The MOU binding NRAO, ATNF and ASTRON will be re-signed for a further 6 months. The MOU and the regular (every 1-2 months) coordination meetings that accompany it are proving to be an effective means to enable joint use and development of the AIPS++ toolkit.

As a part of the July 2004 Critical Design Review (CDR2) for ALMA, AIPS++ was reviewed as the offline software toolkit. The CDR2 panel has concluded that AIPS++ is on track to deliver the off-line requirements for ALMA and that it should continue as the offline package of choice.

## **5) Aus-VO**

Aus-VO did not receive 2005 LIEF/ARC funding. Aus-VO will be assessing the situation so that it can decide how to move forwards. Our Remote Visualization System (RVS) development is funded through LIEF and the current funding finishes at the end of May 2005.

Tara Murphy, representing Aus-VO, attended the IVOA interop meeting and Regional Meeting in Pune in November.

Many of the group attended the annual Aus-VO meeting held in November at Melbourne University. ATNF was the leading contributor to the VO application effort in the last year and our presentations were very well received.

## **6) Application Development**

### **Single Dish**

- SPC Replacement (now called ASAP). Development has been proceeding steadily. In July 2004, we successfully supported DJ Pisano and Juergen Ott at Mopra as a technology/development demonstrator. This formed the basis of a report to the ATSC.
- At present, we have a group of testers testing specific Use Cases. More testing will occur in January followed by a more general release around end Jan 2005 (meeting the majority of priority 0 and 1 requirements). We expect by around mid 2005 that priority 0, 1 and 2 requirements and some of priority 3 requirements will have been met.

### **Multibeam**

There have been continued improvements to livedata and friends as requested by users. A few examples in recent months are

- more robust polynomial fitting
- aips++ Viewer-based version of multibeam view deployed
- Save and recover state in Livedata
- adapted to operate on Arecibo ALFA multibeam system

### **ATCA Pipeline**

A software pipeline is being constructed to

- Attach to the ATCA archive to automatically make images
- Attach to the online system at Narrabri
- Be available generically offline

As part of the transfer of the ATCA archive to ATNF, we have now taken over the CSIRO ICT Centre software which reverse engineers the associative meta data (e.g. which source goes with which target). This is a basic input to an automatic pipeline.

The pipeline now functions well in single pointing continuum mode. Integration with the online ATCA archive is being finalized now; there are some issues around authentication and authorization which we have not yet resolved.

We are working on extending the pipeline functionality to spectral-line data. By the middle of 2005, we expect to have the pipeline operating online at Narrabri. We will also start pushing into the mosaicing domain next year.

### **Remote Visualization System (RVS)**

Anil Chandra presented and demonstrated RVS at the November ADASS meeting in Los Angeles where it received good interest.

We are presently integrating RVS with existing image archives at ATNF (push 'Display' see image). We are also integrating its interface with IVOA protocols like Simple Image Access and Conesearch and next year extending some of its basic display functionality (e.g. rofiling and conference mode).

In addition, we are preparing it for distribution to other interested parties such as Astro-Grid (UK VO) and NRAO.

The feedback we get from users in the next few months will help us evaluate the utility of RVS and establish whether further effort should be put into it beyond the current round of Aus-VO/ARC funding (ends May 2005).

### **Web Services**

We are providing a couple of web services to users. These are a simple 'Quanta' web service (to manipulate values and units) and a more sophisticated 'Measures' web service (e.g. to convert between frames such as Topocentric to LSRK). The idea is to provide one location at which astronomers can find many of the basic computational services that they need (instead of finding them splattered all over the web or in lots of little programs).

A web service can be accessed then via a client (and we will provide HTML clients) and by other software processes; this allows other people to embed the functionality of the service in their software.

The Measures service is a Vacation student activity this summer and should be ready by March.

### **World Coordinate System (WCS)**

Work has continued on the WCS concepts, papers and (tortuous) process of having them ratified as standards. The WCS library has been improved with the addition of new functionality to parse FITS files that recognize the new standards.

The AIPS++ coordinate classes are being upgraded to take advantage of this.