

ECSV Discussion
27 November 2012, 10am in room 317

Attendees:

Claire Chandler, Vivek Dhawan, Dale Frail, Brian Glendenning, Miller Goss, Eric Greisen, Minnie Mao, Josh Marvil, Amy Mioduszewski, Steve Myers, Robert Mutel, Susan Neff, Juergen Ott, Frazer Owen, Dave Roberts, Deb Shepherd, Lorant Sjouwerman, Ken Sowinski, Ravi Subrahmanyam, Gustaaf Van Moorsel, Joan Wrobel

Minutes:

News:

- Low-band:
 - The low-band campaign is completed and most 4-band dipoles were taken down yesterday. Data has been safely archived and are being evaluated now.
 - Ravi had a 4-band test he did last Wed to look at whether the efficiency may be improved by changing the height of the square dipole set above the main reflector surface. Ravi set the dipoles at three different heights and took data (130 GB). He is currently evaluating the results.

Correlator and general system health (Vivek, Ken)

- The Configuration Mapper (CM) in the correlator that specifies how the data is mapped through the station and baseline boards had a major update by Sonja on Thanksgiving. The CM seems to be working well (based on testing yesterday and we ran with it last night).
 - We had only one missing BDF last night (improvements abound).
 - This version of the CM should allow the support of phased array testing so we can push ahead with this now.
- 3-bit sampler status – we are in VERY good shape here:
 - We still have some issues with a few samplers but we know this and we have warned our users. We are trying to weed out the bad samplers but this is not a show-stopper.
 - With the commissioning focus on 3-bit by Vivek, Michael & Ken and RSRO observations over the past month, we now know how to observe and how to reduce the data. Claire has been reducing her 3-bit data (Q-band, 8 GHz BW) in the pipeline and as long as the requantizer gains are applied the pipeline does a good job reducing the data. The data look very good.
 - We now need to do a few more things to wrap up the 3-bit preparations for D array (observing starting 25 January 2013):
 - We still need to verify that the CBE doesn't go into catatonic state when we are observing Claire's project.

- Quantify how strong the calibrators need to be to work at Q band. Lorant and Minnie will do a test to evaluate how bright a calibrator needs to be to work well.
 - We need to make sure the 3-bit SBs can be scheduled with the dynamic scheduler. The latest update to the OPT now means that we will not have to use webtest OPT to schedule 3-bit SBs by hand. But we just need to make sure this will work.
 - We need a big push to get the Documentation in a good state for our users. The focus will be on K, Ka, Q band continuum observation (this is all that was offered for general observing in January; lower frequency continuum and spectral line observations with the 3-bit system will be shared risk or resident shared risk).
- Phased array:
 - The CM update makes it possible to do phased array observations with 2 Gbps data rates now. This has been tested for a few minutes and appears to work but it needs seriously more testing.
 - Vex2OPT still needs some work done by Matthias Bark. Note: Vex2OPT is the software that will take a VLBA schedule file called a VEX file (generated with SCHED) and convert the phased VLA information into a schedule block (SB) that can be read by the VLA on-line system (normally SBs are created by the OPT, Observing Preparation Tool, hence the name of Vex2OPT).
 - The VLBA DiFX correlator had been producing ripples when using the digital down convertor (DDC) needed for the wider bandwidths used with the phased array. This problem has now been fixed by Walter. DDC has some other problems that are still being troubleshooted.
 - We now need to focus on the end-to-end data path (making sure Vex2OPT works well, making sure we understand how to do the relative flux calibration between the phased VLA and the VLBA, documenting everything for our users, etc). Amy and Vivek will continue to push on this. The next step to take is to do a phased array only test (no VLBA) just to make sure that the new CM works well in phased array mode.
- Sub-arrays:
 - The new CM has some changes that may allow sub-arrays with many sub-bands to be started simultaneously. Currently we can only do sub-arrays simultaneously if they do not use a large fraction of the correlator resources (or the CM gets confused). Alternatively we can schedule sub-arrays by hand sequentially. Both of these options are adequate for the minimum we need for anticipated D-array observations. So we are in good shape so far. We just need to continue to improve the flexibility with which we can observe with sub-arrays now.

- Further testing of sub-arrays with the new CM will be done in the next week.
- Bob Mutel has been working on his 2 sub-arrays with 2 sub-bands (1 GHz BW each) and so far the data looks good.
 - Bob will give a summary of his findings next week. He will also make sure that he documents any issues or special needs that a sub-array observation will require from our users.
- Documentation (as with everything else) is going to be the next big push to get this ready for our users in January.
- Claire has seen time variable amplitude wobbles at the 10% level. The interval of the wobbles is about 10min. In Claire's data, EA21 is the worst. We have asked Hsi-Wei to look at his Ka band data to see if he sees anything similar. Note, this problem is not related to the samplers; it is antenna based and only affects the amplitudes, not the phase.
- Last week Frazer reported that he had an 8-bit, 5 GHz dataset, producing a spurious source at the phase center and a colleague of his has also seen this. This is a source that looks like a time-variable source at the phase center and it won't clean up very well. Frazer was finally able to get rid of the spurious source by running quack twice (the bad data was outside of the standard time range).
 - Frazer will ask his colleague to submit a helpdesk ticket with the data set name where he sees this time-variable source at the phase center. Then we can track down the issue.
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- **Note:** in the past, all 3-bit observations needed to use the WebTEST OPT and then Michael or Vivek would run 'model2script' on it so the project could be scheduled manually by the operator. As of today, this is no longer necessary. SBs should be made in the production OPT, submitted, and it will be scheduled automatically.

Testing coordination and best LST ranges for tests (Joan):

- Polarimetry tests are OK to do now.
- No testing after 6 LST (there is now a fixed date observation starting tonight that will run for about 20 nights for 5 hrs each night).
- Test observations should still be done at night:
 - If the weather is bad, schedule tests between 4 & 6 LST.
 - If there is good weather the window is more narrow: schedule tests between 5 & 6 LST.
- Weekday tests continue to be difficult to do given that we still have high pressure from WIDAR, 3-bit, phased array, and sub-array testing.
 - Try not to set up your tests in the weekday but it is possible if necessary.
- Weekend daytimes are still needed for science. We will be having a science Friday this week to try to 'discharge' some of the daytime science SBs.

- It will be very difficult to get test time during the weekend daytime. Its not impossible but do everything you can to avoid this time. If you absolutely cannot run your test any other way except during a weekend day, contact: Deb, Michael, Vivek, Joan.
- On Monday, the disposition letters will go out and we will then know for sure what general and shared risk observation will be done.

Software status (Bryan):

- We have a new SSS software developer, Jennifer Plank, who will be working initially on the PST.
- There was an OPT/OST update at 8am. This also affects fixEB, fixOP and m2sStable (old versions of these programs will not be compatible with the newest database schema).
- Deadlines for SSS software ready for test still good:
 - Dec 3 for OPT/RCT spectral line user interface.
 - This needs to be ready for release before Christmas.
 - Dec 18 for PST testing. Dana Balser and Mark Claussen still need to finalize the requirements. At the current time there are not enough details on the PST requirements for the VLBA and how to handle the GOST functionality in the PST.

CASA (Steve, Juergen):

- CASA 4.0 is not yet released. Release distributions for Linux and Macs are being made.
- Items in the November test version (CASA 4.1) that will need to be tested are:
 - Cal table data can be plotted in plotms at a basic level
 - Urvashi's current patch for clean using nterms=2 – speeds clean up an order of magnitude, better than multi-threading speedup.
 - Requantizer gains for the EVLA
 - Syspower now in Jy scale
 - Linear pol calib document will be ready for review.
 - This is a general description that should be applicable for both ALMA and VLA P-band but it is not written specifically for one or the other. The casa-guide for VLA P-band is still planned but not worked yet.
 - Ability to run flagdata/flagcmd on Cal Tables
 - Feathering GUI – stand-alone tool
 - Development of a Value-mapper tool (needed for the pipeline)
 - Makemask update by Tak (may make it in)
- Testing will be done in the 2 weeks after each monthly release.
 - Every 6 months we will make significant updates to documents, especially CASAguides. Small increments to documentation to make it consistent with monthly releases will be done on the monthly update cycle.

- Juergen, Claire and Deb will identify people to test different features that will be released in the next 6 months. Juergen will also estimate how much effort it will take to do the testing. Then we will approach those people to let them know what their testing responsibilities will be and quantify if/how this impacts their other duties. Given that we will have significantly fewer RSROs in 2013, the NRAO staff will have to do most of this initial CASA testing before a release.
- There is a review scheduled for CASA in February, partly to develop a 3 year plan for CASA.
- From last time: Frazer gave Steve a Linear polarization P-band dataset so Steve will be able to calibrate the data in CASA and see if this works and then start to create a regression script and then a 'casa-guide' for our users on how to do this.

Reminder: CfP documentation update:

- The documentation update is now on-going. Assignments are given below. Updates are due no later than 21 December.

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CfP documentation status

Update for the Jan 2013 CfP (Semester 13B)

Documentation preparation for the call for proposals (Everyone)

- Call must go to CV on 21 December (Friday before Christmas). Documentation content due date will also be 21 December at the latest (but please try to get it in sooner!). The documentation must be reviewed and made consistent before 4 January (when the call goes out).

The proposal overview will be located at:

- <https://science.nrao.edu/facilities/vla/proposing/vlapst2013b>
 - Deb & Claire will be mostly responsible for this

The OSS for 13B will be at:

- <https://science.nrao.edu/facilities/vla/docs/manuals/oss2013b/>
 - Everyone will be responsible according to the proposed assignments identified below.
 - **P-band** will be added to the OSS in two ways: as an intro section giving the status of the system for 13B and added through out the OSS. Frazer will be providing the content for the sections – please see him if P-band info must be added (as indicated below). If you think P-band info (or even just a sentence or footnote) might need to be included and it is not indicated below, please talk to Frazer to see how to approach it.
 - **P-band** will also need to be added to the Exposure calculator and associated documentation.

- Various sections of the OSS:
 - Rick
 - 4.1 Resolution (+ P-band)
 - 4.2 Sensitivity (+ P-band)
 - 4.3 EVLA Frequency Bands and Tunability (+ P-band)
 - 4.6 RFI (+ P-band)
 - 4.9 Imaging (with Urvashi checking this)
 - 4.10 Cal and Flux Density Scale
 - 4.11 Complex Gain Calibration
 - 4.15 Snapshots
 - 4.16 Shadowing and Cross Talk
 - Urvashi
 - 4.9 Imaging – check what Rick has done
 - Emmanuel
 - 4.2 Sensitivity (+ P-band)
 - Steve
 - 4.4 FoV
 - 4.12 Polarization (Note: **no** P-band polarization will be offered for shared risk)
 - Rick add his table of the polarization fraction and angle on the standard sources, equivalent to what is in the old VLA guide at:
<http://www.vla.nrao.edu/astro/calib/manual/polcal.html>
 This is most relevant for actual observing.
 - 4.17 Combining configurations and mosaicing
 - Link to the evlaguides page on mosaicing to 4.5.2 & 4.18 (http://evlaguides.nrao.edu/index.php?title=Mosaic_Observing)
 - Claire
 - 5.8 Data processing
 - Provide link to Juergen’s updated CASA documentation.
 - 5.9 Travel Support
 - 5.10 Student Observing Support Program
 - Add a section on pipeline products. (Maybe just link to an evlaguides page)
 - Vivek
 - 4.8 Positional accuracy
 - Frazer
 - 1.3.1 New Capability for 2013B: Low-Band Status (about 20 receivers, continuum and single field only)
 - Provide P-band content for all sections identified above, answer all P-band questions.
 - Link to P-band evlaguide page

- Susan Neff will provide content for data processing while Huib/Minnie will convert this to plone and update as needed (evlaguide content is not due for the CfP but we should start on this before Susan leaves)
- George
 - 4.11 Complex Gain Calibration
- Michael
 - 4.5 Time Resolution & data rates
 - 4.7 Sub-arrays
 - 4.13 Correlator Configs
 - 4.18 Pulsar observing
- Jon/Amy
 - 4.14 VLBI
- Joan
 - 5.1 Obtaining Observing Time on the EVLA
 - 5.2 Director's Discretionary Time
 - 5.5 Fixed date and dynamic scheduling
- Gustaaf
 - 5.3 Helpdesk
 - 5.6 Observations and remote observing
 - 5.13 Reservations for the EVLA site and/or DSOC
 - 5.14 Staying in Socorro
 - 5.15 Help for Visitors to the EVLA and DSOC
- Lorant
 - 5.4 Observing Preparation
 - 5.7 Data Access
- James/Bryan
 - 5.12 Computing at the DSOC
- Deb
 - 1 Introduction
 - 1.1 Purpose of Document
 - 1.2 The Expanded Very Large Array Project History
 - 1.3 VLA Science Opportunities
 - 1.3.1 New Capability for 2013B: Low-Band Status (Ensure this is set up for Frazer)
 - 2 Overview of the VLA
 - 5.16 On-line information about the NRAO and the VLA
 - 6 Publication guidelines
 - 6.1 Acknowledgement to NRAO
 - 6.2 Dissertations
 - 6.3 Preprints
 - 6.4 Reprints
 - 6.5 Page Charge Support
 - 7 Documentation
 - 8 Key Personnel (refer to people to the helpdesk)

- 9 Acknowledgements
- Other documentation (outside of the OSS)
 - Claire
 - Draft Call for Proposals
 - Pipeline
 - Joan
 - Config plans web page
 - Including LST availability plots
 - Michael, Emmanuel, Juergen
 - General Observing Setup-Tool (GOST) – Includes in-line help (button taking people to the separate help file)
 - Deb
 - TUNE tool, includes in-line help
 - Lorant, Emmanuel
 - Stand-alone RCT (SRCT) for shared risk - includes in-line help (button taking people to the separate help file)
 - Deb/Claire
 - Shared risk observing web page
 - RSRO web page update, include low-band
 - ECSO web page
 - Main Proposal Preparation and Submission page: overview about how to submit a proposal (like a quick-start guide), directing people to different tools and links depending on what type of proposal they will be writing and what to do in each tool if asking for shared risk, RSRO or ECSO.
 - Update the CfP with any last minute changes.
 - Gustaaf
 - FAQ update, add FUnaskedQs discussed at tech review meeting
 - Jon, Amy
 - Phased VLA for VLBI
 - Juergen
 - Spectral line observing guide
 - CASA documentation
 - Mark
 - PST documentation update - <https://my.nrao.edu/nrao-2.0/secure/Help>
 - Exposure Sensitivity calculator (+ P-band)