

**Penticton
Socorro**

Brent, Dave D, Dave F, Donna, Mark, Ralph, Sonja, Zhang
Bill, Bryan, Hichem, Mark, Martin, Michael

Software Focus**Sonja Vrcic**

- Sonja just returned from a few days vacation.
- Working on Station Board software; assigned some Jira issues.
- Focussing on VCI software.
 - Sonja plans to publish a revision of the VCI document based on comments from the last review.
 - The VCI schema has been updated but not published.
 - Dave H would like to work on the obs prep tasks and needs the document to proceed.

Dave Del Rizzo

- Worked on Station Board software.
- Committed to DRAO operations work this week in Ev's absence.
- RTDD work is almost done; anticipates getting the markers working this week.

Martin Pokorny

- Working the kinks out of writing BDF and getting the files through to AIPS.
 - Martin's work is shifting towards improving performance.
- The CBE was loosing some frames possibly due to the network dropping frames when overloaded.
 - Martin is considering changing the buffer setting for the CBE.
 - Brent suggested the frames from the Gbit Ethernet chip could be spread out via the inter-frame delay setting.
 - Installed the latest version of the CBE software at the DRAO site, seems to be working fine.
- Using Kevin's Tom Cat interface to configure start up running BDF files.
 - The data display has to be running.
- Not currently working on version 2 of the BDF document.

Michael Rupen

- Started up the BDF writer and pushing files through to AIPS.
 - Weekly meetings to discuss science results have been scheduled for Fridays.
 - The first meeting occurred Tuesday, October 21 with the review of 3-4 data sets.
 - A second meeting is scheduled for Thursday and from then on the meetings will occur each Friday.
 - Every 5-10 minutes there seems to be 180° phase jumps and issues with closure.
 - NRAO is tracking down the bugs.
- The switch over to 2 antennas occurred rather easily; within an hour had fringes.
 - In a fairly stable state now.
 - There remains some residual naming of antennas. Bruce will contact Sonja.
- Currently, writing to 6 baselines is working fine.
 - Collected a 30-minute data set and made an image of a point source that looked okay.
- Observed extra delays that may or may not be connected to the need to re-boot.

- Michael commented that he may not understand the timing, etc re: system tick and antenna tick
- Getting some correlation but not when tweaked with the phase delay
- The delays appear to be consistent, not a hiccup.
- Michael would like to talk with Brent re: recirculation.
 - Michael would like to try out different, narrower bandwidths before trying the recirculation.
 - Bruce has a table for all the coefficients for different slots and bandwidths (labelled S2).
 - **Action** – Dave F to forward file naming conventions re: coefficients for different slots and bandwidths to Michael.
 - Could be useful to have Dave F online when setting up. Michael to initiate contact sometime this week.
 - Recirculation tasks are scheduled to start next week.
- Performed a few tweaks for LP50s to fix the issue re: amber light at the site.
- Encountering consistently high CRC errors from one input from one of the deformatters.
 - Michael will check with Mike Revnell.

- Mark McKinnon**
- Reminder of the Monthly Issues meeting scheduled for Thursday.
 - Commented re: great progress getting the BDF working and into AIPs....great progress!
 - Advantageous to have lots of people involved; the more eyes the better.

New Software Action Items

- Dave F to forward file naming conventions re: coefficients for different slots and bandwidths to Michael.

Continuing Software Action Items

- Martin to talk to Ray re: how to run tests independently with an external clock.
- Kevin to forward the new code that was programmed into the NRAO board that originates the time code to send to the Fanout Board to Brent for testing at DRAO to proceed.
- Bruce to forward the artificial Linux distribution system created by James to DRAO.
- Brent to consider possibilities for testing the CPCC and let Kevin know.
- Martin to forward a copy of the CBE schema/config to Sonja once a stable copy is available.
- Michael to clarify with Bryan re: Delay Model, on-the-fly observing, smoothing, buffering, and cuing and report back to Hichem and Bruce.

Hardware Update

- Brent Carlson**
- Working on the out-put jitter issue on Y-recirculation.
 - Switching from the Accel regulator was contaminating via the PLL.
 - Brent identified two solutions:
 - Brent added an analog digital ground jumper on existing pads. This works but Brent would like more margin.

- Brent will try a second option that involves updating the FPGAs by distributing a higher frequency clock to all the Accel chips so they don't switch coherently. This solution doesn't require any change for the flying probe program and would keep analog digital ground plane separation.
- Brent removed two failed Accel chips from older version Baseline Boards to be returned to iSine.
 - **Action** – Mark H to expedite the shipment of Accel chips to iSine via FedEx.
 - Brent is concerned that the failed Accel chips will put stress on the Baseline Boards.
 - Brent will inquire if iSine will replace ASICs if failed Accel chips become a significant issue.
 - Brent encountered one additional failed Accel chip from a more recent-version board.
 - Brent intends to remove the failed chip; this procedure requires moisture baking each time a chip is removed.
 - Remaining functional tests include testing the phase out-put and 10Gbit. The board will then be functionally tested and the Accel chip can be replaced.
- BMS reported that 5 more Baseline Boards are scheduled to be delivered to DRAO next week..
 - It is likely that Brent could forward a Baseline Board to NRAO the first week of November if Michael is ready for it and the new heatsink arrives by then.
 - The broken Baseline Board currently at NRAO can stay there for now. Brent commented that this board will never be in the final system.
- Eight Station Boards are ready for environmental testing and burn in.
 - One board has completed degradation testing.
 - Dave commented that 2 boards show re-emergence of the Delay Module connector problem previously corrected by BMS; although they have passed boundary scan. May need to re-flow the offending pins.
 - One wire on each board goes completely bad: JTAG shows wire disconnects.
 - Currently have 8 Station Boards at DRAO that are partially tested and ready for final testing.
- The PC104+ bios has been upgraded on one machine leaving 6 more machines to be upgraded.
 - All of the machines at NRAO have been upgraded.
 - The new PC104+ boards have an older version of bios. Dave is working on a new bios.
 - The Station Board with the power supply issue currently at VLA is to be returned to DRAO.
 - DRAO will ship 7 Station Boards to NRAO and NRAO will ship the problem board back.
 - The occasional FiFo error is evident with the remaining 3 Station Boards at NRAO.
 - Zoran's tweak did not fix the issue.
 - Michael registered a comment on the Jira issue. The error happens once every several hours but is not a show stopper, just a pain.
- The burn-in rack is ready to go, but the burn-in room is not quite ready.
 - It is possible that the target date of end of October will be realized. NRAO is not counting on this date.
- Amy is off due to symptoms related to elevation changes and will be working from home indefinitely.
- Forwarded front panel details for the X-bar Board to Mark H to make the front panel drawing.

Zhang Heng

- Checking the analog ground to five volt power plane.
- Working on the TMT RTC project.

Ralph Webber

- Built another 4 Station Boards and performed boundary scan on each one.
 - Needed to load new code into Xilinx.
 - Put one board through hot/cold testing (9-10 iterations), all boards passed.
- Procurement.
 - Sourced and ordered standoffs for Brent.
 - Investigating Ethernet USB cables, production quantities. Will talk to Dave about Raltron quantities.
- Installing an existing NI 6509 card in a PC to control Monitor and Control in the thermal rack.
 - Conferring with Peter re: Windows/Linux operating system.

Mark Halman

- Creating a drawing for the X-Bar Board front panel.
- **Action** – Mark to contact the manufacturer of the Baseline Board front panel re: delivery status.
 - Brent suggested that the manufacturer be contacted every hour. The delay is a serious issue.
- The heatsinks out for manufacturer
 - Mark to follow up re: delivery status.
- The power supply puller works well.
 - Brent commented that the teeth are at a slant that may cause damage.
 - Brent recommended that the puller should only be used on the power supplies that really need it.

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Bryan Anderson

- Chris Shenton is running tests but Bryan has not heard the results yet.