

Minutes for AMiBA Engineering Telecon

Meeting Date: 22-Sep-2005

Participants:

Australia: Michael

USA: Joshua, Johnson, C.T., Ted, Chia-Hao, Patrick, Locutus

Taiwan: Hiroaki, Eugene, Homin, Paul S., Paul H.

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Minutes Recorder: Kyle (from voice recording)

I. New Action Items:

II. Previous Action Items (still open):

(08/Sep/05)

Pierre - Interlocking mechanism between the hexapod and the shelter. (See Shelter)

(04/Aug/05)

Po-I/Ted - Design a sturdy optical telescope mount (including fixture of the CCD). (See Mount)

(07/Jul/05)

Pierre - Top priority to improve the shelter. (See Shelter)

(07/Jul/05)

Philippe - Photogrammetry measurement preparation. Dummy load preparation. (See Platform)

III. Closed Action Items (as of this meeting):

IV. Miscellaneous Discussions:

Platform:

Ted - Joshua and Chia-Hao picked up correlator dummy weights and brought them to the site. Dayton-Jackson will finish receiver dummy weights on Friday. We should be able to proceed next week.

Philippe - Photogrammetry is a very powerful technique. Accuracy may be limited to 50 micron. Need to put targets and take pictures properly. We will learn as much as we can. We probably need to take pictures in the night.

C.T. - Ted, what's the plan for cable tray on the platform (not from ground up to platform)? Joshua wants to install cables on the platform and cable tray is needed.

Ted - I think we can use standart products. The cables will just be mounted under the platform. I have some weight information and Joshua can order them directly.

Ted - Patrick, what is the accuracy we need to measure about the u-joint position?

Patrick - The quoted number is down to tenth of a um, and I don't think photogrammetry can measure it. I also don't think the error is large, so it can be corrected in the pointing interpolation table.

(15/Sep/05)

Ted - Nylon cable tray should arrive tomorrow and we plan to test it on Friday before I go for the photogrammetry training.

(02/Sep/05)

Ted - Chia-Hao and I will search for safety nets to cover the other empty areas on the platform.

(11/Aug/05)

Paul - Kyle, organize a separate meeting in Taipei with some engineers to sort out the issues with laser measurement system.

Shelter:

Pierre - No update. I just saw the platform in shelter the first time and the fabric is really a problem. Any suggestion is welcome.

Patrick - Bungy cord really helps, but may interfere with closing the shelter.

(15/Sep/05)

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Ted - I plan to replace the lifting cable but need some interface brackets. I have sent the drawing to DaytonJackson but they are busy so will deliver together with our dummy weights on Sep/23.

(08/Sep/05)

Pierre - I have received some stuff for shelter control but still missing the I/O module. More importantly, a second quote I got for the load sensors still requires 8 weeks lead time. I will order it right away and can work in early November.

Pierre - The current interlock mechanism between the hexapod and shelter is not very good. I can improve it by providing a PLC output to Vertex and can work with Stephan to implement it.

(02/Sep/05)

M.T. - Pierre, please get a quote from the shelter expert.

(25/Aug/05)

Ted - I met the ARL people in Taichun and we discussed about our shelter. Two comments:

- Add more motors in case a cable failure happens. Add some structures to keep the fabric folded. Will study more and come up with a quote.
- Build a new shelter, like the design for TAOS, with carbon fiber material. Will propose this new shelter design.

Mount:

Patrick - R-crash seems to be solved. We could do two nights of pointing sessions without R-crash. Two or three issues still remained. I have to discuss with Stephan to solve them. For pointing, we can see most stars except for one or two that are outside the fov. The optical telescope correction is uncertain right now. We will try to sort it out tonight or tomorrow.

Patrick - Two comments about new design of optical telescope mount. For 1.2m and 1.4m receiver holes, the bottom mounting screw hole is slightly different because some of the screw holes interfere with supporting structure and can not be used. The mounting design need to be modified. Another thing is to use one piece mounting on top of platform and also bends 90deg to connect to the telescope, and another piece mounting from the bottom of platform that can be adjusted.

Ted - Please give Po-I the tolerance of the 90deg angle. For example, 0.1deg?

(15/Sep/05)

M.T. - Joshua will pull a new temporary cable of 48V for the optical box.

(08/Sep/05)

M.T. - I have placed an order for a new C8 telescope. SBIG discontinued ST-237 that we are using, and there are some thoughts about upgrading to a different CCD anyway. We can take this offline.

(25/Aug/05)

Patrick - In my last email to Michael, I asked him about the "program track". It has not been tested before and should be tested this time.

Patrick - Some temperature sensors have loose wires that need to be soldered. Someone onsite or in Hilo can do it.

Hiroaki - I have circulated some questions about initialization of the pointing schedule and got some comments back. I will implement them and send the subroutine to Michael and it will be integrated into "a_boss".

Site:

Pierre - UPS for the vertex system is installed.

(11/Aug/05)

M.T. - Open issues in general on site:

- (1) spare parts for the mount. Philippe will be in charge of it.
- (2) helium lines and cables routing to the platform
- (3) lightning protection
- (4) emergency generator
- (5) how do people access the platform. Cherry-picker, ladder?
- (6) camping car, accommodation on site?

Receiver:

Johnson - no update.

Pierre - About the 1-to-4 splitter for the cold head power, I need some connectors to proceed.

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Ted - The new (3rd) compressor arrived and is in SMA. We need get it to the AMiBA office.

(15/Sep/05)

Eugene - The tests were done with noise coupler installed and seems to be higher than the earliest measurements done on Rx1 without a noise coupler. We need to repeat the test on Rx1 with noise coupler to see whether it increased the temperature or not.

(04/Aug/05)

M.T. - Todd Gier is working on our LAN. We will have complete 28 LNAs some time. For spare LAN, as Prof. Huei Wang suggested, we may consider sending the chips to Wisewave for packaging.

C.T. - We might need to ask Todd Gier to send us the housing the bias circuit drawing.

(07/Jul/05)

Johnson - We expect to ship Rx5 and Rx6 in mid Aug after IF/LO is finished.

(09/Jun/2005)

Pierre - Two quick fixes to the LNA power supply card.

1. Reverse the protection diode instead of removing it should provide a protection at 3V.
2. The polarized capacitor at output is reversed and I suspect it is dead. They should be replaced.

LO/IF:

Johnson - Eugene has brought some revised PCB and I will test them.

Homin - Those were fixed for the phase switch part but not the control part. I suggest we disable the control part for now because there seems to be too many bugs. If we need control and monitor, we should make a new board.

(08/Sep/05)

Eugene - Johnson reported the modules in Hilo need two hours after switch on to reach stable performance. I think it indicated thermal isolation and the device need time to heat up and establish equilibrium. I think the thermal link should be improved to protect the devices.

Correlator:

C.T. - I took more data with receiver this week, mainly for stability and SNR to decide the optimal IF power.

(15/Sep/05)

C.T. - I tried to debug phsw and demod because we could not get fringe and it seems the phsw and demod do not match. What usually happens is one of the phsw does not work but now both seems to be working. They just don't match. I will further check it. After I make it work, Kyle can use it to test for a few days to get new data for the calibration system.

(18/Aug/05)

C.T. - After bidding process, we just placed order for the bracket. It will take about three weeks. We will test it in the lab first.

Calibration System:

C.T. - Kyle is in the meeting but he tested the new multiplier in the calibration system last Saturday.

(15/Sep/05)

Kyle - I have also drafted a control flow chart. I will also circulate it for more ideas and inputs.

(18/Aug/05)

Kyle - Pierre found a quote for the motion controller and the PC/104.

M.T. - We should discuss it offline. There should be another person to work on this part since Pierre will be working on the shelter part. There may be some changes to the design and so we should hold on the ordering.

1.2m dish:

Philippe - I think the report from Cotech is not very accurate. I want to discuss with them about the best fit model, probably after I go back to Hilo.

(15/Sep/05)

M.T. - No update about 1.2m dish. Keiichi informed that the 60cm dishes are still in Taipei. Not very urgent.

Paul H. - The 1.2m budget is supported by the first year and is already extended and will expire by Sep. We might not want to tell NSC we can not spend the money. So please contact Philippe and ask him to make a decision.

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Misc:

(08/Sep/05)

Hiroaki - I am still working on the initialization of the pipeline. I will report when it is ready.