

Minutes for AMiBA Engineering Telecon

Meeting Date: 25-Aug-2005

Participants:

Australia:

USA: Paul, M.T., Joshua, Johnson

Taiwan: Chia-Hao, C.T., Patrick, Kyle, Po-I, Hiroaki, Keiichi, Eugene, Ted, Paul S.

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Minutes Recorder: Kyle

I. New Action Items:

M.T./Kyle - Buy a new optical telescope.

II. Previous Action Items (still open):

(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 - I placed the order for dummy load to Dayton-Jackson this week. They have ordered material from Chicago and can deliver the dummy load on Sep/23. I am also designing the dummy correlator. It will be done in a few days.

(18/Aug/05)

M.T. - We'll send Ted and Philippe to Florida on Sep/19 to be trained for the photogrammetry. In the last week of Sep, we can start the survey of photogrammetry. Before that, however, we need reflective targets and the dummy load.

M.T. - About the helium line, I am concerned about coil it up the jackscrew. I have tried to looked for a bellow with proper mechanism to connet up to the center of the platform. I haven't found the appropriate one yet.

Pierre - I think pulling cables along the jackscrew with the help of a cable tray that has only one degree of freedom can work. I will send M.T., Ted and Joshua the link of an appropriate cable tray to buy. You can test the concept.

(11/Aug/05)

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

Site:

M.T. - The military people will move out from the "blue room" but we don't know when that will happen.

M.T. - Cherrypicker order has been sent out to vendor. It will takes one to two weeks to ship from Honolulu.

M.T. - Webcam is still down. We'll ship it back to Taipei since it was purchased in Taipei. We'll also plan to buy a new one of different type.

(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, accomodation on site?

Shelter:

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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.

M.T. - We can put this as our plan B.

(18/Aug/05)

Pierre - I have some quotation to ask for an expert to come to ML and check out our shelter's safety, whether it is according to the code book and so on.

Pierre - I received a quote on load cells, but the lead time is 75 days. I will try to find other sources to speed up the progress.

(28/Jul/05)

Ted - The original cable used to pull the shelter is not thick enough. They look crunched and need to be replaced. I have ordered thicker cable and some hoist ring in order to make the cable safer. They should come in about two weeks.

Mount:

Po-I - I now have three designs of the optical telescope mount. In version 3 we will use thin aluminum material. The two screws structure can be improved in this version.

M.T. - I suggest you look into some amateur astronomy website for different mounting schemes. And try to use commercially available parts in the design if possible.

Patrick - I worry about the alignment of the reassembled optical telescope since the reference plate is removed and installed back. After we refocus the telescope, we should check whether image distortion will introduce pointing errors.

M.T. - We should consider to buy a new telescope of the same type if we have no confidence in the current one. I need Kyle to help me on ordering a new one.

Patrick - New software has been installed and tested. However, there's almost no improvement and therefore Stephan is coming to Hilo about Sep/3 to fix the problems.

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.

M.T. - Joshua has installed the breakout panel.

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".

Receiver:

Johnson - Roof of the compressor fence is installed. Joshua will hook up the power. Adsorber has been shipped out and hopefully will arrive in the weekend. After we replace them, we can start to cool down receivers. And I have installed coupler into all receivers.

Kyle - I have a question regarding the coupler and receiver temperature. We have no direct evidence, but we suspect that inserting the coupler into the RF chain may have increased the receiver temperature from 60K to 80K. I think we can test it by measuring Trx with and without the coupler.

(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.

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2. The polarized capacitor at output is reversed and I suspect it is dead. They should be replaced.

LO/IF:

Eugene - I will schedule with Prof. Chu's lab to use the 50GHz VNA and spectrum analyzer in their clean room to test some components of the LO module.

Kyle - Should we also arrange to test the components under low temperature environment as on site?

C.T. - We may ask Prof. Chu's lab since in their presentation of the miniature LO system, they showed some test under different temperature. They probably know how and where to do it.

(18/Aug/05)

C.T. - There are some open issues we need to close. Hopefully this part can be finished in one or two weeks.

Correlator:

No update.

(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.

(11/Aug/05)

C.T. - I plan to go to Hilo at the end of Aug to test the correlator, and maybe help Johnson to setup the receivers.

(04/Aug/05)

C.T. - Po-I needs to go to ML when the bracket is sent. He will work with Ted to setup the scaffolding to prepare for the installation.

Calibration System:

Kyle - Ordered two SPDT switches for the purpose of turning off the calibration signal in each path. If they arrive Hilo after I have left, I will need someone to bring it back to Taipei.

(18/Aug/05)

Kyle - Chia-Hao did some drawing for the mechanical structure and layout. It will sit in a standard 19" 6U box with depth 400mm.

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.

Helium Lin:

M.T. - We got the helium lines now, and need to install them on the platform.

M.T. - Need to buy and purchase the cable tray suggested by Pierre for routing cables up to the platform.

(04/Aug/05)

M.T. - Ted did an experiment to coil up a 9m helium line to the platform. It is under evaluation now.

1.2m dish:

Patrick - No update. Waiting for Philippe.

(18/Aug/05)

M.T. - Philippe is taking vacation.

Patrick - We can ask Cotech to do more simulations.

(11/Aug/05)

Paul - I want Philippe to lead a review and eventually derive a conclusion whether to make a prototype and how do we do it. Patrick, help Philippe accomplish it.

Philippe - I think we need a complete report from Cotech with all that we asked.

Misc:

Paul - There will be an advisory meeting next month. We would like to have as much of progress as possible before that. I will send an email later and hope everybody take a look and check the schedule.