

Minutes for AMiBA Engineering Telecon

Meeting Date: 18-Aug-2005

Participants:

Australia:

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

Taiwan: Chia-Hao, C.T., Patrick, Pierre, Shockly, Kyle, Po-I, Homin, Hiroaki, Keiichi, Eugene, Ted

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Minutes Recorder: Kyle

I. New Action Items:

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:

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.

Ted - I have a design for the dummy load that have the same center of gravity as real receivers. I have talked to Dayton Jackson and the lead time is seven weeks! I will discuss with them to see if there is any way to speed it up. I am also designing a dummy correlator.

Paul - Will there be any receiver and electronics on the platform to test how it actually work out?

M.T. - Receiver and electronics are ready but to pull helium lines and cables up to the platform is a problem. This is another pacing item.

M.T. - About the helium line, I am concerned about coil it up the jackscrew. I have tried to look for a bellow with proper mechanism to connect 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. - No news from ML about the housing. The room that John Barn referred to is still full of equipment.

Ted - Cherry-picker is under paper work. The vendor can ship it within one or two weeks after order.

M.T. - Joshua replaced the power supply to the webcam server. It got power but still not working. We probably need to send it to be fixed or buy a new one. I'll look into it and ask Sam to help.

Shelter:

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.

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(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:

Ted - Po-I came up with a design for the optical telescope mount. M.T. and Patrick gave some comments. We'll modify accordingly. The main concern is to mount it in a rigid way.

M.T. - This will become a pacing item, since we will have a pointing run very soon.

Ted - In the new design we'll put in adjusting screws for alignment purpose.

Patrick - We did a test this week and Klaus was on the phone. Crashes are not always reproducible. New finding is that crash seems to happen in between the end of slewing and beginning of tracking. (Originally we thought crash happened during tracking.) Klaus will work on it. We will have a telecon tomorrow with Vertex. They will provide some answers. And we'll be more clear about the schedule.

Hiroaki - I have communicated with Michael about the pointing pipeline. I still need to modify my subroutines according to Michael's suggestion.

(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?

Receiver:

Johnson - The fence for the compressor is being installed. We have pillars now and will have chainlinks and roof next week.

M.T. - Joshua will install the outside compressor power receptacle.

(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.

(14/Jul/05)

Ted - I have quoted for the 3rd compressor and additional adsobers.

(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:

Eugene - Last week I checked what Steven had changed on component level and on system level to the IF/LO system. I got all the component test results. About the spurious signal Prof. Chiueh found in IF when LO is under pumped, it was actually due to the unstability of certain poeces of doubler in the LO. The SN/100 module is unstable when there's no input. It is installed in #7.

Eugene - I plan to test all the active deivces in the LO module, the doubler and the amplifier. I will measure their spectrum with different input power level and the small signal S-parameter of the amplifier. This will let us find out if the components have problems or not. And then we can reassemble again and test. This will take several weeks to finish.

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

(11/Aug/05)

Shockly - I sent the IF plate to Wei-Dai to drill mounting holes. And we have received all 12 VGA from Miteq.

C.T. - We will have the IF/LO review meeting tomorrow morning.

Correlator:

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 - I continue to have more quote on the switches.

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. Should we order them now?

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:

Chia-Hao - Helium line was shipped out last week.

(04/Aug/05)

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

M.T. - I will check with Ted about the status of cable tray and mounting.

1.2m dish:

M.T. - Philippe is taking vacation.

Paul - I hope Cotech have something to do during this time.

Patrick - We can ask them 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:

Huan-Shin - I sent out an email describing an one-baseline test for the laser measurement in the lab. The setup will separately test the pure tilt and pure shift case. I need some microshim stages.

Huan-Shin - The DC power consumption I measured is about 150mA at 12V for each node. To be on the safe side, I think we should reserve 3W for each node. For the 7-element array, total power is about 50W.

Kyle - We need this laser system or something else to measure the z-position offset of the receivers on the platform. This is something we can not measure with the calibration system. Current assumption is the offset can be as bad as 1mm.

Homin - If the platform deformation is not time-dependent and only depends on pointing, then you can build a model or a interpolation table to calculate the offset. The laser measurement system makes sense for the active control but not at the current stage. And we may not have enough DC power to provide at this stage.

Ted - The actual deformation will be more clear after we do the photogrametry.