

Minutes for AMiBA Engineering Telecon

Meeting Date: 11-Aug-2005

Participants:

Australia: Michael

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

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

USA Dial-in = 1-800-653-5390, 6668081#

Outside USA Dial-in = 1 847 330 4361

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).

(07/Jul/05)

Pierre - Top priority to improve the shelter.

(07/Jul/05)

Philippe - Photogrametry measurement preparation.

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

IV. Miscellaneous Discussions:

Platform:

Ted - About the photogrametry, we now have three contracts: (1) training of two people, (2) equipment rental, (3) consulting. For the training, it will take three days in mid Sep. We can start the photogrametry in the week of Sep/26.

Ted - As for the platform, Joshua and I put the sensors and cables back. Last week we operated the hexapod and all sensors seems to be functional, except for temp sensor on Jack 1,3,5 that are broken.

Kyle - I want to discuss about the laser and CCD platform deformation measurement. The idea is to test the two sets of laser+CCD on the platform and monitor the change of laser spot as the pointing changes.

M.T. - I am not yet convinced that this setup can solve the tilt and offset simultaneously. Could Huan-Shin prove it in the lab with three imaginary "receivers" on the optical bench?

Pierre/Ted - More planning is needed before moving on to test on the site. Power and cabling should be planned ahead. Otherwise it could be unsafe.

Paul - Kyle, organize a separate meeting in Taipei with some engineers to sort out the problems.

(04/Aug/05)

M.T. - Philippe and Ted will work on the dummy load. They think it should be simple. I think the photogrametry measurement will probably happen in mid September.

Site:

Ted - Joshua is working on the 48V cabling. We pulled the cables through conduits. The breakout box is setup. Now we need to hook up from both container and the cone sides.

Ted - The purchase of cherry-picker is still in the process of paper work. I bought some stuff for the shelter repair and they are also in the process of paper work.

M.T. - The webcam server's power supply is dead. Joshua will work on it.

(04/Aug/05)

M.T. - John Barn (MLO site manager) does not like the idea of mobile home to be parked in the site permanently. He did mention the possibility to transform the room next to the kitchen to our bedroom after military people move out their equipment. He also did not like the idea of using their shower because of limited water supply.

Shelter:

Pierre - I have sent out the report. Ted pointed out a few inaccuracies. Actually we have intentionally kept it simple. The order of magnitude should

Minutes for AMiBA Engineering Telecon

still be correct, about 2500kg. Now I am implementing the improvement mentioned in the report into a PLC here in Taipei.

Pierre - I also sent emails to two experts, one in Honolulu and one in Kona. I asked them if they can come to ML. I am still waiting their answers.

Homin - There should be a mechanical way to synchronize the motors, like pulley or something. It can be considered for the future.

(28/Jul/05)

Ted - The original cable used to pull the shelter is not thick enough. They look cruched 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.

Pierre - We should find an expert who can come to inspect the shelter and make a report for record. And he may check our improvement plan as well.

Paul - Ask Allen if he knows someone suitable for this role.

Mount:

M.T. - I measured the current optical telescope mount that was used on the dummy ring with a dial-gauge. I measured the distance between the L-shape bracket and the telescope tube at different elevation angle. The converted tilt angle is about 4 arcmin in all direction. This wedge bracket structure needs to be improved. I will send a memo later to show you how I measured the tilt.

Po-I - I had discussed with Patrick and Ted abot the design of optical telescope mount. Ted will send me some dimensions. Patrick can bring the current design of mount to Hilo when he goes.

Paul - For the Vertex software, currently they send a new version or ask for some tests, we do the test, and then they respond after a day or two. This mode is not satisfactory. If they don't want to come to ML to do the test, at least we should make them to join the testing on the phone. They can respond to the testing result immediately. If everybody agrees, someone should tell them.

M.T. - I will tell Vertex.

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 - Ted just sent the PO to do the fence for the compressor. I will contact the vendor to ask them do it asap. In the mean time, I will do some room temperature tests on the receivers.

(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 addtional 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:

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:

Minutes for AMiBA Engineering Telecon

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.

C.T. - We have tested the correlator box and bracket interface in Taipei, but the interface of bracket to the platform can only be tested on site. I think it will happen after the photogrammetry dummy load test, after mid September.

(28/Jul/05)

Po-I - About the bracket of the box, the 3D figure is finished and I shall finish the 2D figure in one or two day.

(14/Jul/05)

C.T. - We will have another discussion about how to install the correlator box onto platform.

Calibration System:

Kyle - I have ordered the mixer needed for monitoring the calibration signal. I think I can go to Hilo in the early Sep to the new harmonics generator and the mixer, after CT finishes his test on correlators.

Pierre - I got a quote for the motion control board, but not the PC/104 yet.

Helium Lin:

Chia-Hao - I will ship the helium lines this week. The packaging is ready. I plan to go to Hilo in about three weeks.

(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:

Patrick - I collected the open issues. But I think now we should decide whether to sort out all issues then proceed or to let them make a prototype and we sort out the issues in the mean time.

Ted - There are some issues about the analysis that Cotech did not answer clearly, like temperature effect. It is better done now. Otherwise, we will only find the problem when the dish breaks on the site.

Paul - Tzihong is not here, so it's hard to make a decision independently. This is an engineering issue. 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.

Paul - Get on the phone with them and talk to them directly.

M.T. - I want to see what's in the contract. Can Paul Shaw send a copy to me?

Paul - About enlarging the apex hole on the 1.2m dish. Has this idea been fleshed out? Has Tzihong thought about what it takes other than just put in more feeds?

Kyle - It is under evaluation. For example, we are evaluating how much RF components can be put in the 30cm chamber, and how many cold head is required to cool down all seven feed+RF components.

Paul - We should consider to enlarge the apex hole when the other aspects have been thought out. It is good to think about other things if we have time. It should not slow down our progress for the 7-elements now.

(04/Aug/05)

Patrick - I sent out a list of issues I collected from people. There are two open issues. One is the spec of the tolerance. Huan-Shin is using a ray-tracing software (OSLO) to check the tolerance. And should we (ASIAA) verify their FEA model before Cotech starts to produce the primary?

Misc:

M.T. - The 48V power for the optical telescope should not be a problem.

M.T. - I agree with Patrick's concern that Vertex might not be ready for us to do pointing test in the next two weeks.

Patrick - Vertex don't answer some questions that are somehow important to us. Paul or M.T. should call them and ask them to answer.

Minutes for AMiBA Engineering Telecon

Paul - As for the test they want us to do. Either they have to be on the phone and able to answer our questions, or if they can not answer our questions and need to think about it, they should just come over to Hawaii to solve the problem.

Patrick - I suggest that we all go through Michael's utility tools. As for the software logger, Hiroaki will be in charge.

(04/Aug/05)

Michael - Some comments after the meeting with Vertex:

1. I don't know how they fix the on-source flag, since the servo-loop is always closed. I think we will need to test.
2. About the tools, I would like to see some users be familiar with the various utilities I have provided to analyze the mount.
3. If the pointing error can be reduced, the simple analysis package can work, but we shouldn't count on that. Among other things, I think we should improve the analysis to find the center of rotation.
4. I will also work with Hiroaki to improve the pointing schedule pipeline.