

Minutes for AMiBA Engineering Telecon

Meeting Date: 12-Jan-2006

Participants:

Australia:

USA: Ted, Bill, MT, Keiichi

Taiwan: Homin, Kyle, Edwin, Eugene, CT, Paul S., Chia-Hao, Joshua, Johnny, Paul H., Hiroaki, Patrick

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Outside USA Dial-in = 1 847 330 4361

Minutes Recorder: Kyle

I. New Action Items:

II. Previous Action Items (still open):

(29/Dec/05)

Bill/Ted/Pierre - Modification of shelter.

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

IV. Miscellaneous Discussions:

Platform:

MT - I will contact Philippe to find out the progress.

(29/Sep/05)

Philippe - I will spend some time to look into the safety issues of operation.

C.T. - I would like to ask the science team to finalize the configuration of 7-element receiver locations.

Shelter:

Ted - Lifting cable from M3 motor was found to be damaged from overload and friction. We've temporarily replaced it with the same cable as for M1 and M2. We will order better ones to replace it. And since we found that M1 and M2 may also be overloaded due to imbalance problem, we should upgrade these two motors to bigger ones for safety.

Bill - Later we will send the two motors back to vendor for check and repair. After repair we can keep them as spare.

(08/Dec/05)

Pierre - I rewire the motor control and it is working. Now I am working on software. Also I'm waiting for some parts for hand panel and other things.

(13/Oct/05)

Pierre - One year ago we asked Manfred to add a few relays and software in PLC to indicate mount is in parking position. We need to test its function whether the relay is closed when the mount is parked when next time I am in Hilo.

Pierre - I have sent a mail to ASFI for calculations and detailed drawings.

Mount:

Patrick - About the new optical telescope bracket, I think we can install it now and later won't have to worry about changes to pointing model due to this bracket.

MT - How good can we align the bracket to the platform? 0.5deg?

Patrick - Currently we did not tune the alignment and the tilt was measured to be about 0.5deg. With shimming, we should be able to achieve 0.1deg.

Keiichi - We've installed ACU v2.4 and tested it with PTC v2.5. It seems that PTC correction is not activated although it is claimed to be on the display. I've checked two critical elevation for azimuth zero crossing problem. There's no obvious problem and it seems to have been solved. We'll check the log file for detail. As for startrack skypol rotation, I can send some information to Patrick and Hiroaki to help with the analysis. As for program track speed problem, we did not have time to check all. We'll spend some more time for this test.

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Keiichi - ACU timeout happened three times. It was probably correlated to some physical hitting of the LAN cable.

Keiichi - We used to login with Michael's account for testing, but now the config was changed.

Homin - From now on, everyone should use his own account. The system has been checked and the software should be able to run by anyone. For future testing, could the observer inform me or make an announcement of the test schedule before the testing so that I can help on the operation problems.

(22/Dec/05)

Homin - We tried to find the problem of network timeout to ACU issue, but Michael does not have enough information. We need to start logging a fault report whenever tests are done and errors encountered. I have added a category in the blog.

MT - You should see what SMA test log looks like. No matter how boring it is, you note it down.

(16/Dec/05)

Michael - Repeatability needs to be checked. I think we can observe the same star several nights in a row. If they agree with each other, then it's probably good enough. For longer period, like a month, change in pointing model, we have to live with it. We will change the interpolation table regularly. On the other hand, there aren't many factors to change the pointing.

(25/Aug/05)

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

Site:

MT - We have shut down the two receivers on platform. The reason is because we can not use the temporary cable to monitor the receiver status (Rxmon) while operating the mount. And running the receivers cooled without monitoring is a concern. In the future when we have the correlator pc on platform, we will be able to monitor.

Ted - We have been working on the design of elevating the shelter. We hope to finish the design by this week and send to machine shop. And Bill is also working on the three entrance covers that lead into the support cone.

Ted - Finally I've got three quotations for the sleeping container. We will place order to the lowest bidder. There is some minor issue about wiring and breaker box. I will consult Joshua and Pierre.

(08/Dec/05)

Pierre - I got a quote for the 2ndhand generator. It's about 10k including shipping to site. I'll also look for some comparison.

(24/Nov/05)

Pierre - Is there a coax cable for 10MHz clock from GPS time server to correlator on the platform?

(27/Oct/05)

MT - As for a new car, we seem to have reached a consensus. We also need emergency generator and lightning protection.

(11/Aug/05)

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

(1) spare parts for the mount. Philippe will be in charge of it.

(3) lightning protection

(4) emergency generator

(6) accommodation on site -> 2nd container for sleeping? Or visitor building for sleeping and 2nd container for office?

(7) a new car

(2) helium lines and cables routing to the platform

(5) how do people access the platform. Cherry-picker, ladder?

Receiver:

MT - I will ask Johnson to summarize a report on the receiver and IF/LO testing on site.

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(05/Jan/06)

Chia-Hao - We will ship out Rx5 and Rx6 tomorrow.

(29/Dec/05)

Johnson - The LNA in Hilo can be used to assemble another two receivers.

(08/Dec/05)

Pierre - I found that the LNA bias comes from a 7805 regulator which is sensitive to temperature change. I ordered a 8588 chip which is programmable and more stable. I plan to use hair dryer to test it.

(10/Nov/05)

Kyle - The first two Rx on the platform can accept one polarization of calibration when the cal source is ready.

(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 - We've almost completed tests on the new LO heat sink. Revised heat sink improves the output power by 0.6dB under passive air cooling. Blowing air into the module with a fan does not change the output power much. Basically I think I would like to keep the new design. I will summarize the report when all tests are done.

(05/Jan/06)

CT - I will ask Johnson to monitor the (DRO) frequency drift on platform with temperature variation.

(27/Oct/05)

Johnson - We also tested the phase switch in IF/LO5. The result is different from Steven's. I used 2.4mm cable but Steven used 3.5mm cable. 2.4mm should give the correct result. I will use 3.5mm to double check the consistency.

Correlator:

CT - I have placed an order for another industrial PC. For the testing in Feb and Mar, we will still use the current corrPC. I have setup the data transfer circuit in the lab and will ask Joshua Chen's help to solve the X-window problem, so that we don't need to activate X for remote operation (from control container).

CT - For the gas spring, we need it for the installation of correlator modules. I plan to ship them to Hilo in end of Jan and I can test it in mid Feb. Johnny is looking to buy a load-cell to measure the gas spring.

Homin - If only for test purpose, the gas spring can be sent to measure locally and we don't need to buy load cell ourselves. It probably can speed up the process.

(22/Dec/05)

Po-I - I have made some modification to the translation stage mount design. The detail can also be discussed after meeting.

(10/Nov/05)

CT - I am looking into the backup plane of readout system. Simulation shows the FPGA should work. I will continue this after I get back from Hilo. I will depart next week.

(06/Oct/05)

C.T. - I want to test one baseline with electronically-tuned attenuator for LO to balance the power between phase states. One concern is if the control has some delay (like we found in prototype testing with a PIN attenuator in 21GHz LO), then the scheme would not work.

Calibration System:

Kyle - Before Pierre went on vacation last week, we contacted a few vendors about the Linux version and driver for the motion control compatibility. One of the vendors had good response but the other did not answer yet. I will keep pushing them to find an answer.

MT - I will try to find someone to help you.

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(13/Oct/05)

Kyle - I will put together a schedule when the calibration should be online and when we should really push to finish the system.

(29/Sep/05)

Kyle - I will circulate the test results presented in the workshop for more comments. And we also need to discuss the next step of the calibration system.

Dish:

Paul S. - Dr. Ong updated the schedule that they are planning to have the primary for surface measurement on Jan/19. The next item was indicated as beam pattern, correct?

Patrick - I think the plan was for us to check the primary surface data first. If necessary, we can change the curvature of secondary to fit.

Paul H. - The first thing is to make a good primary. If it does not meet the spec, we'll ask them to fix. If they can not fix it, then they would have to explain. And then we will consider changing the design.

MT - Is Protty going to be in charge of checking the coating?

Kyle - My understanding is they will put some mask on the coating sample to create a sharp boundary that can be measured by the surface lab in phys department.

MT - Paul S. will ask Protty if he is going to take charge.

Ted - I have asked Cotech to add some design to hold the dish cover. I don't know if they did.

MT - I remember Prof. Chiueh mentioning a holder for small opt telescope. Is it in the design?

Paul S. - The small telescope holder is in the design but the fabric holder is probably not. I will ask them to clarify.

Ted - About the 60cm dish cover, Dayton said he can only finish the structure early next week. By that time, I will be gone. The fabric from GORE will come in early Feb.

MT - Bill, can you help on this issue? Just check how it looked like and maybe if you have some other idea.

(10/Nov/05)

Patrick - Locutus is designing the interface with beam pattern measurement setup.

Misc:

MT - I think we really need to solve the Vertex problem and close the contract. RF test will begin in Feb. Now we are lacking manpower for the test. Johnson has done some testing regarding freq drifting and noise temperature. Let's wait for his report.

(16/Dec/05)

Patrick - MT mentioned that we should have a place to collect all the important information and factors of the system, different from the everyday communication of problems.

CT - I think for what Patrick said, people can request such information in the weekly meeting and the responsible person will come up with the information and be collected somewhere. The important information does not change very often.