Minutes for AMiBA Engineering Telecon

Meeting Date: 07-Jul-2005

Participants:
Australia:
USA: Keiichi, Hiroaki, Ted, Philippe, Paul Ho, Jeff
Taiwan: Chia-Hao, C.T., Johnson, Joshua, Patrick, Pierre, Shockly, Kyle, Po-I, Guillaume
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Minutes Recorder: Kyle

I. New Action Items:

Philippe/Ted – To arrange a crane to lift the platform in order to mark the interface ring.
Philippe – Prepare mechanical measurement of the platform. Contact photogrametry people.

II. Previous Action Items (still open):

Ted – verify/mark the hole pattern on the interface ring.
Ted – investigate the new optical telescope mounting structure. (finished?)
Homin/Guillaume – fix the problem of Linux CCD control software.

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

IV. Miscellaneous Discussions:

Platform:
Philippe – Mr. Moo has problem to drill the holes to the tight tolerance. We have decided to ship the interface ring after fishing the pickup holes and painting next Wednesday. We'll take the ring to ML and put it under the platform. We can mark the exact hole-pattern and take the ring back to machine shop in Hilo and drill the holes. We expect to mark the hole on ML on Jul/18.
Philippe – We need some spacer to account for the pin from the platform. There is no alignment hole on the interface ring yet.
Philippe – About photogrametry for the platform deformation, they charge roughly 25k/trip or 200k to buy the equipment. I don't think we should buy the equip.
Paul – We can afford to do a few measurements of photogrametry before deciding to buy the equipment, if that's what we want to do.
Jeff – Consider a mechanical measurement to find out relative deformation with and without weights on the platform. Use a light steel tube/frame to bridge across the ends of the platform and install dial gauges to probe the platform. Even though the frame is not stiff, it can still measure the platform with zero load and with some dummy weights.
Paul – Because photogrametry used to show much more complicated deformation than mechanical measurement. It seems we should do a mechanical measurement as was done in CMA plant and a photogrametry measurement as in Vertex to check how good is the fix.
(30/Jun/05)
M.T. – Another issue is the photogrametry measurement of the platform. I would really like to know the flatness.
Michael – I suggest you can put on some dummy receivers to simulate the deformation at different orientation when it is fully loaded. And also you could buy the targets now and install them on the platform while it is still on the ground. The targets come in a roll and are adhesive.

Site:
Ted – I need suggestion and help from all of you to find a suitable cherry-picker and articulating boom or self-erecting crane. The boom is can not reach the far side of the platform and need to move around. The one suggested my Michael is small and can lift 500lb.
Pierre – I already bought UPS for Vertex computers. I will install them next time I go. No UPS is needed for 48V power supply except for the one used by correlator PC on the platform.

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(30/Jun/05)
M.T. – It seems we need both a crane and a cherry-picker to install and service the correlator and receivers, but both equipments are not cheap. We need all of you to think hard on this issue.
M.T. – I'll check how BIMA service their telescope.
(16/Jun/2005)
Ted – For the crane, I found one but still need to discuss with the sales. This one can operate under 72km/h wind and survive under 152km/h. When fully extended is 16m high, and is 2m high when stowed. Plan A is to erect it outside the fence on lave with a large concrete slate. Plan B is to erect it just outside the containers.
M.T. – Ted, please talk to Ludwig about the concrete slate.

Mount:
Guillaume – I can now take both light and dark images using my Linux software by changing the filter. Somehow I can not control the shutter as a preferred way to take the dark image.
Patrick – Vertex asked some questions last Friday regarding my report. No new report.
Patrick – Plans for the optical telescope:
(1) Two screws to help stabilize primary mirror.
(2) Designed a mounting structure with two sided support of the tube.
(3) Need an extended support for the camera.
Patrick – Sheng-Yuan showed me a spare telescope for SMA, but there are still some problems before it can be used.

Receiver:
Johnson – We improved bonding of 5 SHM to add better RF grounding and have tested 2. The RF return loss has improved. They can now be used in Rx7 and Rx8.
Johnson – We expect to ship Rx5 and Rx6 in mid Aug after IF/LO is finished.
C.T. – About the circular polarizer, Millitech has a matching product but does not guarantee low-T operation. We bought two and will test them after they arrive.
(30/Jun/05)
Pierre – We still need the fencing. I got three quotes but all expensive.
M.T. – Kevin has suggested some cheap, ready made, dog house that may suit our need. I will hold this issue until we find a good solution.
Ted – For adsorber in the compressor, the lead time in Taiwan is 6 weeks.
M.T. – We can contact the local CTI people. It will probably be faster.
(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/C.T. – DSA analysis of the AVG control voltage showed some low frequency contamination. Adding a capacitor has improved it and the capacitor will be included in the design.
(30/Jun/05)
Johnson – The VGA should arrive around end of July, but I will email to check the status of the order.

Power Distribution:
C.T. – I will discuss with Pierre about 48V power distribution cable. See if we have all of them or we need to order more.
Pierre – Cold head power distribution is all ready in Hilo. Just waiting for the compressor to be installed outside (need shelter) and we can test the cold head power distribution.
(16/Jun/2005)
Pierre – Waiting for three filters I ordered.

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Shelter:
(16/Jun/2005)
Pierre - The other shackle needs to be replaced, too.

Correlator:
C.T. - I verified again the new design of backplane by testing with a modified old design. I also use software to simulate the output waveform.
(30/Jun/05)
C.T. - I have finished the design of backplane modification and will send it to fabrication. We also had a meeting Tuesday about the bracket.
Homin - I would suggest Ted to measure the real dimension on the platform for the correlator bracket and Po-I can talk to machine shop about our requirement.

Calibration System:
Kyle - We had a discussion in Taipei about how to proceed on building a calibration system prototype. We discussed the possible mechanical layout and the requirement of computer control. Chia-Hao and Pierre will help me on these two items.
Kyle - I need a signal switch and a mixer for the monitoring/feedback of the calibration signal. I got some quotes and will work on them to make a decision on what to order.

Helium Lin:
Chia-Hao - I have got the helium lines ready. I don't know when to ship yet.
(30/Jun/05)
Ted - I will use the 9m helium line in Mauna Loa to test the routing. I have also given some lengths to Helix in Taiwan. They will help us estimate the pressure drop.
M.T. - When you come here next week, we should place the order for the 3rd compressor.

Misc:
Kyle - According to M.T.'s email, we should return the prototype dome and adjacent building area to MLO by end of July. I volunteer to clean up the space because I should know what is ours and what's not.
(30/Jun/05)
M.T. - Some people have been complaining the logistics to Mauna Loa. I will ask Mauna Loa people about sleeping in the site and think about how to improve our buildings.
(16/Jun/2005)
Patrick - Need some help for a 30m long 48V power cable. It is needed when we want to do pointing with the platform.