# Minutes for AMiBA Engineering Telecon

Meeting Date: 3-Mar-2004

Participants: Australia: Michael USA: Paul Ho, Ming-Tang, T.H. Chiueh, C.J. Ma, Jeff, Ferdinand Taiwan: Kyle, C.T. Li, West, Homin, Steven USA Dial-in = 1-800-653-5390, 6668081# Outside USA Dial-in = 1 773 843 6301

Outside USA Dial-in = 1 773 843 6301 Minutes Recorder: C.T. Li previous weeks comments

#### I.New Action Items:

**AI-04Mar04-1:** Philippe - To discuss whether we should perform a full-load test (possibly with some dummy dewars) of platform on the mount with different orientation?

#### II.Previous Action Items (still open):

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

**AI-12Feb04-1:** Ming-Tang – To discuss whether we will do end-to-end test in Taipei, and whether that would require current amplifiers to be inserted to imitate the final amplifiers?

Ming-Tang - Right now we're still planning to do the end-to-end testing in Hilo.

T.H. Chiueh - Is it possible to select components or modules for each IF chain so that they will compensate each other to give you a flatter IF spectrum?

Ming-Tang - There are two possible approaches - either we can use those old RF amplifiers, or try some broadband IF noise source. Will discuss more with other people about exactly how the tests will be carried out. One concern is whether the result is valid if we don't use the final components in the end-to-end test. It would be easier to do the end-to-end test in Hilo with receivers.

Paul Ho - We can do as much test as we want in Taipei. But we will need to the end-to-end test in Hawaii anyway after everything is shipped to Hilo. If we found something wrong during the end-to-end test, we have to go back and retrofit things.

#### IV.Miscellaneous Discussions:

#### MMIC:

Huei - Jackie has received the invoice information about the shipment. Have asked Paul Shaw to remind her to hurry up the application of tax exemption document, also ask NJST to send out the chips right away.

Huei - The chips have arrived in Taipei. They're in custom right now. We're applying the import tax waiving document.

#### Receiver:

Ming-Tang - Tashun is checking the vacuum of receivers #2 and #3. For the alignment, we have some mechanical structure to align the feed horn along with the window holder. The components will move a little after several thermal cycles, but they're still within the alignment.

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Homin - Tashun keeps testing those two receivers.

#### LO/IF:

Steven - Sent out the test report. Tried to define the optimum LO power.

Steven - Finished the temperature test of the IF/LO module in temperature chamber yesterday. The results showed the power deviation at 42 GHz over temperature range of -10 to 20 degree C should be 0.1 dB. Also tested the module with different 21 GHz input power levels from 5 to 14 dBm.

#### Correlator:

C.T. - Have the control circuits connected with correlator computer to test the data transfer. We're still waiting for some electronic components. We got another quote for correlator frame. It will take the machine shop 4 to 6 weeks to fabricate it.

West - The cable company will ship 6 IF cables (3 modified from the 60" cables that we have, and another 3 brand new ones completely made by them) next week. Will contact them about the time scale to modify the rest of IF cables.

C.T. - Warwick and I continue testing the control circuits and software. For the IF cables, the company promised to fabricate some cables that we can test the total delay difference between them. If the result is within our specs, we can have them fabricate the remaining. Ted has got a quote for the correlator frame. But the price is a bit high. We're asking a quote from another machine shop.

#### Platform/Mount:

Ming-Tang - Bob Romeo is still working on the modification of the platform. Philippe likes to wait for the glue to cure, then assemble the platform and do the load test next Wednesday. Will ask Philippe to update the schedule according to the new development before next Wednesday.

Michael - Vertex was concerned that according to the previous test performed in CMA, platform seemed to deflect more than projected. That might affect the pointing accuracy.

Paul Ho - The previous concern was whether the platform would fall apart once mounted on the mount. Therefore we're going to implement the steel plates to interface between the platform and hexapod.

Michael - I think Vertex's working assumption was that they would produce a pointing model calibrated up to the universal joints of upper ring of platform. We essentially promised to provide a rigid ring to attach to. Anything above that is our problem. In concept, they can put optical telescopes on the universal joints. They can make sure they can calibrate it that any place in the sky we wanna place, they can point it within specs. The ring that universal joints attach to is the common territory.

Ming-Tang - We have asked a company to do a more complete finite analysis of the platform. We should have their report in two weeks.

Paul Ho - According to Philippe's email, CMA people have arrived in Vertex last week. They have disassembled the platform and started the modification. Everything is on schedule so far. The modification should be done in 2 weeks. Then Vertex is going to assemble platform and mount, and do some static tests.

#### Calibration System:

Dish:

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## Site:

Ming-Tang - So far we prefer Ferdinand's alternative site design in terms of cost and delivery. As Paul Shaw pointed out there's still some issue about the shelter. Once it's resolved, we can move on with the site.

Ferdinand - Have sent out a memo for the alternative site (enclosure) design. Got two quotes from Ludwig. It's 55K US dollars for the current design, and 36K for the alternative design. The latest price for the clam-shell enclosure is on the order of 7500 dollars. The construction of alternative site design will take 4 to 6 weeks, compared with 10 to 12 weeks for current design.

## 2-Element Prototype Testing:

T.H. Chiueh - We didn't make much progress because of the storm. We went up to the mountain to rescue the prototype. Everything is back to normal now.

T.H. Chiueh - We haven't done two items which could be important for the production type - one is the phase stability, the other is the possible change of spectral shape. We will use the translation stage to work on these two issues.