Meeting Date: 08-Apr-2004

Participants: <u>Australia:</u> Michael <u>USA:</u> Derek, Johnson, Ferdinand, Paul Ho, T.H. Chiueh <u>Taiwan:</u> C.J. Ma, Huei, Paul Shaw, Kyle, C.T., West, Homin, Steven USA Dial-in = 1-800-653-5390, 6668081# Outside USA Dial-in = 1 773 843 6301 Minutes Recorder: C.T. Li previous weeks comments

I.New Action Items:

II. Previous Action Items (still open):

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

AI-01Apr04-1: Ming-Tang - To compile a list of modifications we need to do on platform, e.g. loose weldnuts, delamination at the ends, stiffness. Ming-Tang - According to Philippe's email, we need to add shielding for the end fittings. They plan to fix the weldnut problem when the platform is in Hawaii. There is no clear solution to the de-lamination problem. But CMA has to think about it. For details, please refer to Philippe's mount telecon minutes attached in the end.

AI-25Mar04-1: Philippe - To find out what Vertex plans to do during the in-plant calibration test and how they plan to implement the pointing model. Michael - Will arrive in Vertex on May 3rd for 3 days, in the same time with Vertex's laser tracking test and calibration. Ming-Tang - We need to extract the exact time line from Vertex, also to see if we can push Vertex to stick to the original schedule so that Michael can do some tests in early May.

AI-11Mar04-4: Ted - To check the progress of dish cover design.

Ted - Have contact their Taiwan branch. They can give us some special offer. Still waiting for their reply for more details. Ted - I got the reply from Gortex's Taiwan branch. The minimum order of the material is 500 meter square. The price is about 1 Million NT dollars. We will need 10 meter square for 7-element. Ferdinand - The previous quote I got from Gortex is about couple of thousand US dollars for the amount that we need. I will look it up.

IV.Miscellaneous Discussions:

MMIC:

Huei - We will get the chips on Friday according to Jackie's email. Then we can start testing.

Huei - We're waiting for the tax exemption document, which is different than usual since we will export those chips one year later.

Receiver:

Homin - We will ship out Rx #2 with IF/LO by the end of this month. Ming-Tang - The flange for a valve is broken that we can't pump down and cool down the receiver. We are waiting for metallic flanges from Taipei. Johnson will test the receiver in room temperature first.

Ming-Tang - Johnson tried to set up the Hilo lab for testing, to see if he can finish the test on Rx#1 before he leaves in mid April. Homin - For the control electronics, we have two sets ready. The DC-to-DC converters are all ready now, but not yet tested. Tashun is still working on Rx #3 and #4 - assembling, testing of vacuum and cold head.

LO/IF:

Homin - All the components for IF/LO have arrived. Steven and others are doing the acceptance tests. Then they will integrate the modules.

Steven - We found some problem when testing some components. I will check with Prof. Chu and his students about it. For IF/LO cables, Andrew has assigned another contact window. We need to check with them about the exact delivery time. I will start to test the cables again in Prof. Chu's lab.

Steven - We have received all the components for 7 elements this week. We started to assemble #3 and #4 IF/LO modules. I used our network analyzer to test IF/LO cables at 20 GHz. I have asked Andrew a quote for 10 of 11-meter cable for LO distribution, 20 of 4-meter ones from receivers to correlators, and 50 of 10-meter from 1^{st} to 2^{nd} sections of correlator system. We will have #3 module by end of April. We can ship the 2^{nd} receiver by end of this month.

Correlator:

C.T. - Having a problem at the connection between readout and datacq.

C.T. - continued testing the data circuit up to readout. We're asking a quote for the semi-rigid cables from company in states. Derek - The current design drive level at the correlator module inputs is -10 dBm. We have about 6 dB spare power for some un-expected loss. We probably will use up some of the spare power in the revised slope equalizers or longer IF cables.

Platform/Mount:

Ming-Tang - Philippe sent out a telecon minutes as attached. We're going to have an in-plant test procedure by April 19^{th} . So far everything in the schedule is slipped by one week. We have decided not to put on the cable wrap cone during the in-plant tests. After Along's result, Philippe needs to figure out how to modify the platform in Hilo. The acceptance test is scheduled on May 21^{st} .

Michael - For the calibration, it's important for us to prepare as much as we can to provide Vertex immediately with the pointing data they're asking for. What is amounted to is getting the optical telescope installed on the platform and then running a set of observations on a variety of stars to get representative measure of error as a function of right ascension and elevation. We need to check if we can embark the pointing check once the platform and mount are handed to us. For the preparation, we have the observing program that Homin is working with me and get it to run on the machines in Taipei. We should ensure that will run on the schedule mode. On the other side, we need to be able to process the image catured by the optical telescope in terms of RA, HA or declination... pointing error. C.J. and Proty were doing that in the early date of observation of prototype. We should make sure that is working in the form that can quickly capture the data. Finally there will be a link to the observing program that everything is synchronized.

Ted - Along will delay for one week for the platform analysis. They will give us the analysis result, model, and their suggestion for the final or 3rd modification. Ming-Tang - Vertex likes to try the cable wrap cone. However, Philippe is concerned that they might run into the loose walnut problem at the lap joints.

Calibration System:

Ferdinand - Went up the mountain to check out the CW calibration system. However, the current synthesizer is generating too much spurious. They in turn showed up in the IF band, which interfered with our testing. With a proper synthesizer, we should be able to generate lines moving across our IF band.

Ferdinand - Plan to go up the week to do some test on the CW noise source. Got several quotes to upgrade the current system with polarization maintain fiber, just a preparation for later. Not date is confirmed about John Payne's visit to ML. We might get away from the polarization scrambler if the polarization maintain fiber works.

Dish:

Site:

Ferdinand - We got the final drawing for Neil Harrison. Also got the drawing for electrical. We will have a construction meeting tomorrow. We will go over to Mauna Loa Laboratory to explain to them what we're doing over there. Ground breaking is aimed for next Friday (April 16th), before the excavation.

Ming-Tang /Ferdinand - We're hoping to have the ground breaking in this month. Ferdinand is wrapping up all the drawings with the architect. Hope to have the PO out for the site inspector, and the architect for updated blue prints. Hope to have the electrical drawing back by next week.

2-Element Prototype Testing:

T.H. Chiueh - According to fringe data from translation stage, C.T. calculated the single-band effective bandwidth from 13 to 14 GHz. If we put some equalizers to suppress the low frequency band, Keichi found that the single-band effective bandwidth can be enhanced to be about 17 GHz.

T.H. Chiueh - People were doing analysis on translation stage data. The effective bandwidth of IF is about 16 GHz.

Administration:

Paul Shaw - We need to feed back the budget plan according to the approved budget by 6^{th} of this month.

AMiBA Hexapod Mount

Minutes of the telecon dated 6 April 2004

Participants: VERTEX: Roland Kirchhoff, Konrad Pausch ASIAA: Paul Ho, Michael Kesteven, Philippe Raffin

- Hexapod testing status. All wiring is finished. Apart for a few minor problems with limit switches that had to be replaced, VA is moving forward. Up to now, the hexapod has only been moving up and down, because the jacks are commanded in manual mode, one by one. The computer has not been used yet. It should be used next week and major tilt performed. By the end of April, the system should be ready to move with the ACU and the interface with ASIAA computer ready.
- 2) Testing schedule. Michael has a very tight schedule and has arranged to be in Germany on May 2nd for a few days for the interface testing with ASIAA computer. According to Konrad's latest schedule, these tests could take place a week later, after the laser tracker measurements. The acceptance testing would take place last, around mid-May. There is a one-week delay because of the late delivery of the platform. VA will send the in-plant Acceptance Tests Procedure on April 19th. Laser tracker measurements could start early May. For these tests, it will only be possible to use the laser tracker for 1 or 2 full elevation sets and one full range of polarization. Michael said he would need only one hour then analyze the data and return to the interface testing later on. It seems that there could be no conflict and both tests could be carried out simultaneously. VA will look at this possibility. Anyway, everything should be completed by the end of May for shipping before June. Paul Ho said that one should try to stick to the shipping schedule as much as possible and work the testing around that.

After the meeting, Konrad confirmed the 3rd of May for the computer interface tests. The laser tracker measurements will be done after.

- 3) Testing scheme. All the software should be ready sometime in April. VA is working on pointing details. Michael asked which pointing model scheme VA had adopted. Konrad said that the analytical model might only work with a very stiff platform and that hey chose the tabulated solution. This systematic table could contain 100 or 1 million entries. The more measured points there are, the more accurate the interpolation would be. ASIAA would make a number of stellar observations and VA return the updated table. VA will supply a separate software to convert measurement data to a regular grid. These data will be sent to the PTC. The PTC will calculate the (?az, ?el, ?pol) for each desired position and this will be fed automatically to the ACU. This scheme will be available for Michael to look at when he visits Germany early May.
- 4) On-site activities. Konrad asked about his proposed on-site manpower swap: VA could send a mechanical engineer to help with the mount assembly and platform integration, and a servo engineer for the telescope re-commissioning, instead of people for the calibration tests. ASIAA is agreeable on the swap and will send a written confirmation to VA. However ASIAA will need the support of VA for the on-site calibration tests. Konrad is the person responsible and will work with ASIAA, together with his team at VA. Konrad added that by contract there is an 18-month commitment from VA and that VA would work in a collaborative way with ASIAA, but that major effort should be limited to 9 months or so. Paul Ho commented that ASIAA committed to have everything working in a year from now.
- 5) Next telecon: to be held in the week of April 19th, after ASIAA receive the in-plant Acceptance Tests Procedure from VERTEX.