

Minutes of Teleconference on ALMA OSF Holography Planning

Thursday, March 2 2006, 15:30 UTC.

(Minutes written 2006-03-02)

Participants: Beasley (part of time), Brito, Emerson (chair), Glendenning, Janes, Lucas, Mangum, Michalski, Murowinski, Perfetto, Seiicho, Sramek, Wootten.

AGENDA:

1. OSF Holography Tower Location(s)

We need a decision.

See the maps and diagrams at:

http://www.tuc.nrao.edu/~demerson/osfholo/rickmap_lines.gif

http://www.tuc.nrao.edu/~demerson/osfholo/def_terrains.gif

with further discussion notes in our Jan 20 minutes at:

http://www.tuc.nrao.edu/~demerson/osfholo/minutes2006-01-20_2.pdf

2. Action Items

ACTION ITEMS from last time. See Feb 17 minutes at:

http://www.tuc.nrao.edu/~demerson/osfholo/minutes2006-02-17_0.doc

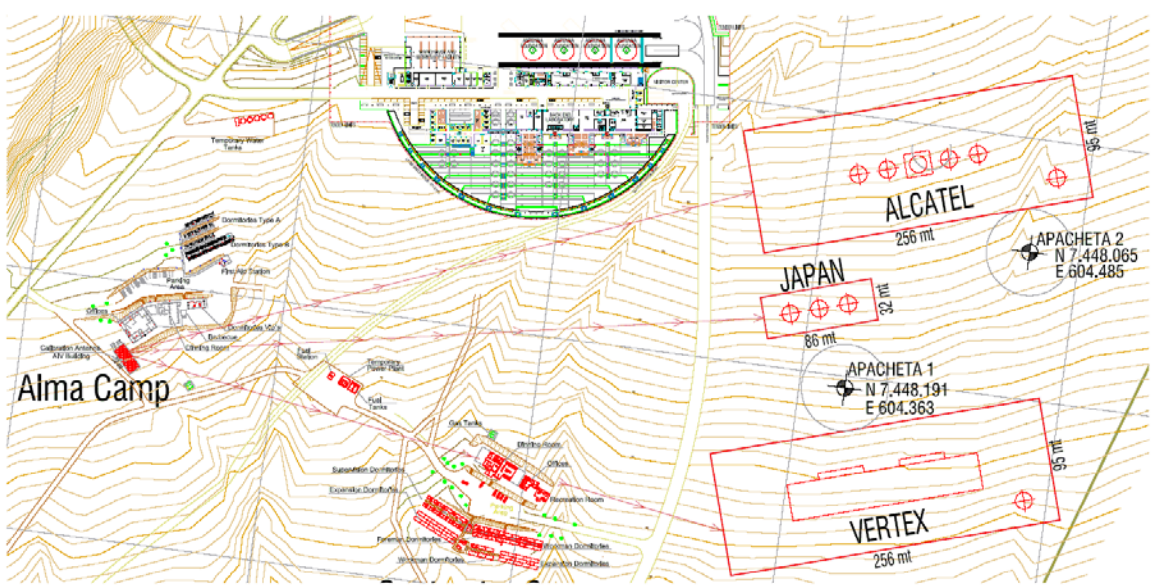
1. Clint and Antonio continue to work together on the interfaces. The BE SOW will be circulated shortly.
2. Antonio will ensure that all ICDs will be approved by April 15 2006.
3. Dick will arrange a short test to ensure the laser synthesizer still works.
4. Rick will circulate a schedule, within one week of today's meeting, for comment by the group. Any necessary revisions will be completed before our next teleconference.

3. The Schedule

Rick distributed Draft 0 of "Holography Task List and Responsibilities" by email on 2006-02-27. Please read the text and the attachment of Rick's message.

1. Holography Tower Location

Rick presented a new concept for the placing of the tower – see the map below.



New Proposed Siting of Holography Tower

Just prior to the meeting, Rick sent the following note:

“a) we have a decision on the location of our temporary lab which will support the Vertex and MEICo acceptance tests (including holography for those two vendors); see the attached sketch.

b) Tony and I were chatting about this and our clear preference from the services point of view would be to locate the transmitter tower either

1) at the cleared area of the temporary power plant: already served with roads, already has power, looks like a good berm-clear line of sight to Vertex and MEICo (and AEC too, if needed), looks like about 300m distance to the antennas but hasn't had terrain profiles plotted, or

2) right beside the AIV building: where the land is a bit higher than the above suggestion, which simplifies Antontio's control of transmitter electronics, but the vectors are about 450m long.

Does the group have advice on which of the two is preferred?

Jacques, are there any clearance issues we need to know about in putting a tower near the fuel tanks?”

The location near the AIV building is about 450 meters from the ACA or Vertex antenna pads. The initial thought was that the Vertex pad would be in the top left corner of their compound as shown above, but a better location might be half-way down. The issue is that, after leveling, the ground level within the Vertex compound would be 4 to 5 meters below the surrounding ground at the top left of the compound.

The main disadvantage is that, at this greater distance, the elevation angle of the tower transmitter as seen from the antenna will be lower, with the greater likelihood of

reflections from ground and (for example) other buildings along the path – particularly true for the Vertex antenna.

The alternative location, just above the temporary power generation plant, would match our optimum distance of 300 meters from the ACA and Vertex antenna pads, so that the likelihood of reflection ground and other obstructions would be reduced. This is the preferred location of the 2 options.

Another location closer to the dormitories of the ALMA Camp was suggested, and may provide a better line of sight to the ACA antenna.

Rick agreed to provide Darrel with a revised map showing precisely these alternative locations, and Darrel volunteered to generate terrain profiles.

2. Previous Action Items

1. Clint and Antonio continue to work together on the interfaces. The BE SOW will be circulated shortly.

Antonio reported that the FE SOW and the BE SOW need to be reconciled. The FE SOW need updating to reflect the 2 sets of support electronics for the 2 transmitters and 2 receivers that are now required.

Rick confirmed that there may now be 2 towers which may be in use at the OSF simultaneously. However, an antenna positioner is only required for the transmitter on one of the towers, not both.

Clint asked about computer control. Rodrigo volunteered to come up with a list and diagram of computer requirements; he will contact Brian for some of the details. This is needed both for the OSF and for the ATF. Rodrigo also agreed to update the SOW.

Brian expressed concern about the schedule; his current priority is to implement what's required for first fringes at the ATF, then moving to holography.

2. Antonio will ensure that all ICDs will be approved by April 15 2006.

Antonio confirmed that work for this is on schedule.

3. Dick will arrange a short test to ensure the laser synthesizer still works.

Dick is pursuing this. It was confirmed that this is only intended as a back for the ATF, not the OSF, and also that this item is of low priority.

4. Rick will circulate a schedule, within one week of today's meeting, for comment by the group. Any necessary revisions will be completed before our next teleconference.

This was done, but see the discussion below.

4. The Schedule (this section written by Rick).

Discussion of the schedule focused on two major themes, 1) the interaction of the holography schedule other work at ATF, and with Vertex delivery date, and 2) the development of ancillary electronics.

1. ATF test and Chilean delivery schedules

The date which remains scheduled for acceptance of the Vertex antenna remains the end of January, '07. In Vertex's contract, the holography hardware (along with other test hardware such as OPT) is delivered to them for installation on the antenna at a point labeled "Antenna Inspection Point, Chile" (AIPC), so that this equipment may be used during the acceptance tests. Hence the current schedule is that AIPC occurs in early December, followed by two months of acceptance tests, and then Acceptance. We are working toward delivering a known good holography system to Vertex in early December '06. Working backward in the schedule, this leads to a need to verify the holography system at the ATF starting in early August 06, prior to shipping that to Chile.

Brian expressed concern that this work at ATF would conflict with other work planned there. Tony replied if that happens we would need to make a decision on how to deal with this: whether tasks could be accelerated or run in parallel, or ultimately which of the conflicting tasks would take priority while the other slips. In any case, both holography and other ATF major tests should remain visible in IPS so they can be adjusted when their successor task changes (e.g. if the Vertex delivery date were to change) and so we can anticipate and make informed decisions on how to react to task conflicts.

Nobody said they would be unable to meet the schedule Rick distributed, so Cesar will ensure IPS holds a holography schedule consistent with that.

2. Ancillary Electronics

Discussion of the design of the ancillary electronics which, has remained poorly defined. The purpose of the electronics is to provide standalone support electronics in the receiver cabin to perform holography prior to any other major subsystem installation. The ancillary electronics need to provide everything Holography needs in the receiver cabin when the antenna is still in the state delivered by the vendor: with ALMA cables defined by Arno's document installed, and a minimum of network hardware installed sufficient to get the network to the receiver cabin. Hence the ancillary electronics contains an ABM, generation of 25Mhz and TE, power supply, all interfacing to the standard ALMA cables defined for the cabin.

Clint asked Rodrigo Brito to put together and distribute an electrical drawing of the ancillary electronics and take the lead in putting that together. Rick will distribute the electrical block architecture of the interim lab equipment, antenna under test and inter-building cabling at the time of first antenna AT.

Brian proposed the test of the holography system in C'ville be done with only the labview control, leaving integration and test of ALMA software with this hardware to NM (either AOC or ATF). Discussion of the pros and cons of this, group agreed to follow Brian's proposal, Rick will modify the schedule to show this.

5. Action Items.

1. FE SOW needs updating to reflect the 2 sets of support electronics.
2. Antonio continues with the ICD tasks, to be completed by April 15.
3. Rodrigo Brito will list computer requirements for holography both at the ATF and the OSF. He will come up with a draft document within one week.
4. Dick continues to pursue the laser synthesizer as a backup for the ATF holography, albeit at low priority.
5. Rick will provide Darrel with revised tower and antenna pad sitings. [Already done, see http://www.nrao.edu/~demerson/osfholo/sketch_2006-03-06.pdf]
6. Darrel will create terrain profiles from Rick's data.
7. Darrel will arrange another telecon of the group in about 2 weeks.