

D R A F T 2005-10-27

## Minutes of Teleconference on ALMA OSF Holography Planning

Thursday, October 27th 2005, 16:30 UTC.

**Participants:** Donoso, Emerson, Eschwey, Glendenning, Lucas, Murowinski, Ocampo, Perfetto, Sramek, Webber & Zivick

### AGENDA:

1. Introduction (Darrel)
2. Progress on Action Items from previous meeting
3. Schedule discussion
4. New Action Items

---

#### 1. Introduction.

Darrel mentioned that he had started a web page for the OSF Holography Planning, with minutes of meetings and other documentation, at <http://www.tuc.nrao.edu/~demerson/osfholo/>. Please send Darrel any useful documents or links to be included on this page. Eventually this should be incorporated into EDM.

#### 2. Previous Action Items

- **Receiver and Transmitter:**

Prior to the meeting, Antonio sent the following summary of activities:

- “1. The holography receiver was moved from the ATF site to the NTC in C'ville.
2. Cost for the transmitter's positioner is underestimated in the current budget. The transmitter needs to be pointed in at least three directions and involve a change in elevation as well as in azimuth. Started looking for commercial positioners. Need to get info on the tower's top equipment mounting plate (more specifically max allowed weight and plate dimensions).
3. Receiver main feed horn: CDL's Sri Srikanth will be responsible for the new feed design. Working on estimated start date and total amount of effort needed for the feed construction and test.
4. Spare holography receiver cost estimate: No progress.
5. Need to investigate impact of two new antenna designs on holography receiver handling at the OSF.
6. Holography system project account will be open by next week. This will allow allocation of resources and purchase of materials for the development of two new transmitters and upgrade of the receiver.

This is my action item list for the next few weeks:

- Complete holography system SOW.
- Complete draft plan for the development of the transmitters and receiver upgrade.
- Work on draft ICDs between holography and back end and, holography and site.

I think it is important that we all work and agree on a detailed block diagram for the holography system at the OSF.”

In response to a question, Antonio commented that the only change in the receiver design was in thermal stability, which did not affect any interfaces. The existing receiver and transmitter are still capable of operating on two different frequencies (78 and 104 GHz), although an earlier report from Jeff (based on experience at Apex as well as at the ATF) suggested that 2 different frequencies were no longer a requirement. The spare receiver might not incorporate this 2-frequency capability, just because of cost. Antonio is working on detailed cost and schedule. Reflections might still be an issue, especially depending on the details of the contractors’ antenna pad locations.

It was noted that the Japanese will use the existing ALMA holography transmitter, and also the receiver for their 12-meter antennas, but will use their own receiver for their 7-meter antennas.

- **Holography Tower Siting**

Darrel referred to the draft document [Draft on "Siting of the Holography Transmitter Tower at the OSF" by Emerson, Eschwey and Donoso](http://www.tuc.nrao.edu/~demerson/osfholo/) currently available via <http://www.tuc.nrao.edu/~demerson/osfholo/>. This proposes a tower location 310 meters from the OSF holography pad (“pad 7”), along a line towards the SE corner of the OSF compound. This document also gives a terrain profile to “pad 7” as well as to possible contractor antenna pad locations. There is a very slight worry about ground reflections, which Darrel is trying to quantify. As soon as more precise locations for the contractors’ pads are available (not available at the time of this meeting), more terrain profiles will be generated. Jorge also confirmed that all 7 antenna pads within the OSF circle are indeed in the budget.

It was noted that the tower should now be visible from 4 different locations (ALMA + 3 contractors) and that it is important that none of these positions be unfairly compromised. The possibility of moving the tower after early contractors’ measurements was mentioned, but dismissed as being too costly.

### **3. Schedule**

Just before the meeting, Rick distributed an Integrated Project Schedule (IPS) for OSF holography, outlined by IPT, and outlined by Early Start. These documents are available via <http://www.tuc.nrao.edu/~demerson/osfholo/>. A number of issues came up as part of general discussion. The Holography Requirements document needs updating (writing?). Rick will look into who has responsibility for that. The OSF tower is an off-the-shelf item, so no requirements document work is required. The computer interface to the holography system is essentially unchanged, so no extra work is required there.

Brian expressed concern that the schedule has holography being tested at the ATF in about June 2006, which is likely to conflict with the attempts at getting first fringes at the ATF, at around the same time.

It was clarified that holography data reduction is an ALMA responsibility, not of any contractors. Control of the telescope and of the holography receiver during holography measurements at the ATF would be from the contractors' areas, or from the ALMA control room, according to who was making measurements. Control of the holography transmitter however is standalone from the control system, and would always be controlled from the ALMA control room.

#### **4. Action Items**

The following were identified as specific Action Items following this meeting:

1. Antonio will complete his estimate of holography rx & tx costs, including for the spare receiver. Antonio will also update his estimated schedule. All estimates will be passed on to Rick for incorporation into the master schedule.
2. Dick and Brian will come up with a plan for network topology at the OSF. The JAO has responsibility for implementing this.
3. Darrel will refine terrain profiles as soon as more detailed information on locations of contractors' pads is available.
4. Someone, probably a victim within the Science Group, needs to write or update a Requirements Document. Rick will follow up with AI on finding a victim.
5. Rick will update and continue to keep the master schedule.
6. Darrel will add material to the <http://www.tuc.nrao.edu/~demerson/osfholo/> OSF Holography Planning web page, as it becomes available.

#### **FUTURE MEETING:**

This same group will meet by telecon in about one month, with documents being distributed by email before then.

**DTE.**