

# **Minutes of Teleconference on ALMA ATF & OSF Holography Planning**

**Thursday, November 16<sup>th</sup> 2006, 16:30 UTC.**

Minutes by DTE, last changed 2006-11-21

**Participants:** Emerson, Glendenning, Kern, Krady, Mangum, Marson Perfetto, Ramirez,, Sramek, Webber

*All future meetings will use the same call-in details:*

*From USA: 866-814-1347*

*Outside USA: +1-517-444-3243*

*Participant Passcode: 3155752*

*(Leader Passcode: 1874599)*

Minutes of our last (2006-11-09) meeting are at:

[http://www.tuc.nrao.edu/~demerson/osfholo/mins2006-11-09\\_1.pdf](http://www.tuc.nrao.edu/~demerson/osfholo/mins2006-11-09_1.pdf)

## **AGENDA.**

- I. Status Report from the ATF
- II. What does “Acceptance” mean for the holography system currently being tested?
- III. Action Items
- IV. Schedule

### **I, Status at the ATF**

Jeff Mangum & Darrel reported: a good deal of progress has been made in the last week, although we are still not back to the holography quality and capability we had in 2005. Testing is proceeding with specially written Python scripts for specific tests, as well as with “standard” Scheduling Blocks and the Scheduler program. The computer system is gradually becoming much more robust, although there is still some way to go. The

transmitter – receiver frequency drifts are still present, but have been much less problematic in the last week; we don't know why. The transmitter power stability has been made less troublesome by running the Agilent frequency synthesizer at higher power (+13 dBm), so running transmitter multiplier into saturation.

We are still spending time solving both M&C and data analysis software issues. Jeff explained that about 5% of holography data is not being properly tagged with positions, which is causing Robert Lucas some grief. Brian responded that he thought the figure to be close to 0.2% rather than 5% of data.

We have been using “manual mode” extensively for testing, apart from “normal” holography maps which use Scheduling Blocks and the Scheduler. Unfortunately, the manual mode is unable at present to interact with the Archive.

## **II. What does “Acceptance” mean?**

Darrel expressed his concern that if “Acceptance” means of a usable system that a non-expert operator could use, then it is unlikely that such a system could be ready by mid-January 2007. However, if we mean a system that a very small number of experts were capable of using, then that is probably feasible on this timescale.

Rick responded that we should consider two phases:

- (1) A system needed to test the first Vertex and MELCO antennas. The important characteristic of this first delivery is that the system meets performance requirements to accurately measure the antennas, even if lacking ease of use. The measurement on production antennas could be done with a small team of holography experts. Delivery of the receiver to the vendor must be made by about May 07, which means shipment of hardware and software from the US not later than about April 1 2007.
- (2) We want to be able to use the holography system for routine measurements; it should become a facility holography system by the 4<sup>th</sup> quarter of 2007.

A reminder was given that the production Vertex system will involve a new antenna computer, the ACU, the interface to which will need more debugging.

The initial holography in Chile would be performed by a subset of the current team, but using more remote support. The team, still TBD, might involve 2 – 3 scientists, an EE, a ME and software support.

Dick reminded attendees that in this period we also have to continue ATF support.

## **III Current Action Items** (see minutes of last meeting).

1. Antonio hoped to have a summary of the holography DSP system available next week. Darrel volunteered to write up a list of “tricks” used in operating the tx & rx which helped to get good holography results.

3. Feeds. We do need duplicate sets of holography feeds, to the current design – this was discussed in our meeting of 2006-09-07: see the minutes of that meeting at [http://www.tuc.nrao.edu/~demerson/osfholo/mins2006-09-07\\_1a.pdf](http://www.tuc.nrao.edu/~demerson/osfholo/mins2006-09-07_1a.pdf). Antonio said he expected to receive new feeds by the end of January 2007, with about one month of measurements needed after that.

#### **IV Schedule**

There was much discussion. Immediately after the meeting, Brian sent his own CIPT schedule:

- November 20-22: Holography stress tests (ITS)
- November 22 COB: Control finishes ACS6 porting
- November 26 - December 2: BVV & RL holography (Darrel/Debra/Jeff/Ralph/ITS support)
- November 27 COB: Preliminary ITS ACS6 validation completed; punchlist distributed
- November 28 - December 3: ITS preparation (SS2, ACS6) for ATF install.
- December 1 - January 15: OP mini-rack supposed to be available. Get OP working well enough for Alcatel. Possible?
- December 4 - December 8: SS2, ACS6, holography punchlist, installed by ITS at ATF. Some validation possible (antenna may be stationary). Must be possible to roll back to earlier system.
- December 9 - 17: ITS tests at ATF. Shared antenna access will likely be required. Should Exec/Archive send representatives?
- December 18 - 21: Debra to organize CIPT mini test? Exec/Archive send representatives? Output is punchlist for real user test.
- January 9 - 15: Current scheduled date for holography user test (Murowinski)
- January 16: Holography readiness review (Murowinski)
- January 16 - 22: Punchlist work (Murowinski)
- January 23 - 24: Holography acceptance test (Murowinski)
- January 24: Holography dismantled (Sramek)

Rick will distribute a revised schedule. This will appear at <http://www.tuc.nrao.edu/~demerson/osfholo/schedule/>. (Note that the latest version, v.11, does not necessarily represent accurately a historical record of past events.)

#### **IV. Current and New Action Items:**

A big outstanding issue continues to be documentation.

1. Antonio will provide the remaining hardware user manuals and a template of the Users' Manual.

*This is still pending.*

Details of the DSP algorithms need to be disseminated. *Still pending: promised the week of 2007-11-20.*<sup>1</sup>

2. Continuing AI: ICD update on temperature monitors, no later than one month before shipment of receiver #2. Some minor items from Ralph to be corrected in the next ICD issue.  
*Still pending.*
3. Continuing: Holography feeds from Antonio.  
*Pending, but **long-term feed redesign** agreed to be of very low priority.*  
Duplicate feed sets (a total of 9 feeds) to the existing design of **very high priority**.  
Delivery expected Jan 2007, to be followed by 1 month of testing.
4. Schedule: Rick will continue to keep updated as necessary.  
*In progress.* See <http://www.nrao.edu/~demerson/osfholo/schedule/>
5. The current known problems at the ATF need to be fixed  
In progress<sup>2</sup>. *Testing continues*
6. Darrel agreed to produce a “Tips on optimizing the performance of the holograph rx & tx” document. [Done, see <https://wikio.nrao.edu/bin/view/Main/AlmaHolographyCribSheets> for this and for other useful documentation.]
7. **Next Meeting**  
Darrel will organize the next teleconference for November 30<sup>th</sup> at 16:30 UTC.

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<sup>1,2</sup> After the meeting (on 2006-11-21), Antonio sent the following:

“I have an update on a couple of items:

- We've received the 10 MHz Rubidium standards. They need to be packaged before they can be used but I hope to have one ready for the transmitter side by early December.

- Documentation: The DSP detailed documentation is still a problem. Wes is preparing for the BE review of the LLC and LPR on Dec 14 so I'm sure if he will be able to complete the dsp docs before that date.”