

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

**HAYSTACK OBSERVATORY**

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24 January 2003

TO: Distribution  
FROM: Alan R. Whitney  
SUBJECT: 22 January 2003 e-VLBI telecon summary

Attendees:

Bill Fink, Lee Foster, Pat Gary, Paul Lang, Bill Wildes – GSFC  
Steve Bernstein, Kevin Kranacs, Rick Larkin, Lorraine Prior, Peter Schultz – MIT Lincoln Lab  
Kevin Dudevoir, Hans Hinteregger, Arthur Niell, Alan Whitney – Haystack Observatory

This telecon is one of an ongoing series of telecons to prepare for gigabit/sec e-VLBI demonstrations between NASA GSFC and MIT Haystack Observatory using a combination of network facilities including all or part of Glownet, Bossnet, ISI-E, SuperNet, Max and GSFC/HECN.

**ACTION ITEMS ARE HIGHLIGHTED IN RED.**

Continued Testing

- Haystack to GGAO path needs to be re-evaluated after changes that have been made over the past few weeks, including the new fiber from between ISI-E and Eckington.
- GGAO should be back up about end of January; Haystack plans to begin testing again soon, including tests to Japan via ISI-E and Abilene.
- Bill F. report that MTU sizes on kame and superglide seem to be currently set to 1500B. **Bill will contact Tom Lehman to get these extended; copy to Kevin.**

Glownet/Bossnet

- Peter reported that Bossnet has been in stable operation with GigE for several weeks now. Plan to try OC-48 again in next couple of days to understand why OC-48 is still apparently not working well. Successful OC-48 operation is a pre-requisite for any attempt at 10GigE operation.
- *Bossnet is now an unfunded project.* Fiber lease runs through 31 October 2003, but future is uncertain. Lincoln is now vigorously working to secure funds for continued operation of Bossnet.
- Steve reported LL is looking at possibility of allowing e-VLBI the dedicated use of one of the existing three GigE wavelengths between Haystack and Lincoln, at least on an interim basis. There still will have to be occasional sharing of Bossnet (but not too often). Haystack will procure replacement GigE switches for loaner units currently in place at Haystack and Westford.

- Bill F. and Kevin agreed to re-start some end-to-end testing before end of January. Steve and Lorraine will talk to WNS people about Glownet scheduling constraints over next few weeks and report back.

### GigE switches

- Paul reported he is planning to evaluate a 24-port GigE switch from SMC at ~\$2600. He will report back on this evaluation.
- Hans reported that the Dell PowerConnect Model 5224 switch at \$2200 provides 24 GigE copper ports plus 4 SFP slots (which take away from the 24 copper ports if used) and supports jumbo frames; an SFP LX module (1300nm, 10km range) is ~\$300; an SX module (900nm, 550m range) is ~\$150. Haystack is currently using this switch in a Beowulf cluster.
- All agreed to distribute information on GigE switches as it becomes available.

### Meetings

Alan reported that an Internet2 meeting will be held 9-11 April 2003 in Arlington, VA. An e-VLBI track is being organized. Further information at <http://events.internet2.edu/2003/spring-mm/callforproposals.html>.

An e-VLBI workshop will be held 15-16 May 2003 in Dwingeloo, The Netherlands (further information at <http://www.jive.nl/jive/jive.html>); this meeting follows the successful e-VLBI workshop held at Haystack Observatory in April 2002. An 2004 e-VLBI meeting will be held in Japan.

### Connection to Hawaii

Two Dell PowerConnect GigE switches have been ordered by Bill W. to support the connection from Kokee Park to Haystack. These will be used to light the fiber between the NASA VLBI building and the PMRF communications building at Kokee Park, which will then connect to the microwave OC-3 link down to the PMRF site at Barking Sands. Switches are expected to be shipped the first week of February. If all goes well, the connection should be ready for testing by about the end of February 2003.

### Connection to USNO

All arrangements have been made for a GigE fiber connection to USNO, but USNO still has budget problems and a go-ahead has not yet been issued.

### Report Status

Alan distributed a draft report for review. Still needed:

- Author list
- Definitions and acronyms
- More visual material for results (perhaps VLBI source image)
- End-point-platform limitations on data-transfer speeds
- Still lacking information on MAX
- Would be useful have paragraph or two on GSFC network links
- Description of nuttcp (from Bill F.)
- Reference list

Alan will re-distribute draft report in Word format so people can edit and re-distribute (done).

Pat will put together a description of path from MAX through GSFC (new section 8.4)

Bill W. will put together a short description of path at GGAO.

Bill F. will provide a short write-up on nuttcp.

Steve will somewhat expand Bossnet description.

Everyone is urged to respond within the next week or so if possible.

Suggested distribution list:

- All experiment participants, who would pass them up through their respective organizations.
- National and international VLBI community
- National and internal networking communities, including Internet2.
- Potential funding sources (NSF, DARPA, others?)
- Further suggestions are solicited

#### Next telecon

Next telecon is scheduled for **Wed, 26 February 2003** at 2 pm EDT.

xc: Steve Bernstein, LL  
Jim Calvin, LL  
Lorraine Prior, LL  
Leslie Weiner, LL  
Herbert Durbeck, GSFC  
Bill Fink, GSFC  
Lee Foster, GSFC  
Pat Gary, GSFC  
Chuck Kodak, GSFC  
Kevin Kranacs, GSFC  
Paul Lang, GSFC  
Aruna Muppalla, GSFC  
Bill Wildes, GSFC  
Dan Magorian, UMCP  
Tom Lehman, ISI  
Jerry Sobieski, Max  
Richard Crowley, Haystack  
Kevin Dudevoir, Haystack  
Hans Hinteregger, Haystack  
Arthur Niell, Haystack  
Joe Salah, Haystack