

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

**HAYSTACK OBSERVATORY**

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22 November 2002

TO: Distribution  
FROM: Alan R. Whitney  
SUBJECT: 20 November 2002 e-VLBI telecon summary

Attendees:

Lee Foster, Kevin Kranacs, Bill Wildes – GSFC

Tom Lehman - ISI

Lorraine Prior – MIT Lincoln Labs

Kevin Dudevoir, Hans Hinteregger, Joe Salah, 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.**

Status Reports

The attached figures of the e-VLBI path have been updated to reflect current status and are pretty much self-explanatory. The following status updates were reported:

- New fiber is in place and operating between ISI-E and Eckington, as Tom reported to everyone by e-mail.
- Lorraine and Tom reported that there are still problems trying to bring Bossnet back up to OC-48. Tom suggested that some loopback testing with Sonet gear is being planned to isolate the problem.
- Tom reported that Abilene connection at ISI-E should be in place in a couple of weeks. Connection will be into ISI-E Juniper M40 (G10 on diagram). **Kevin will send Haystack, Hawaii and Germany IP information to Tom in support of the Abilene connection at ISI-E.**
- Alan reported that agreement has been made with MAX to connect USNO to MAX via George Washington University and that project is moving ahead. Agreement with NASA to support e-VLBI as a sponsored project needs to be reached.
- Alan and Hans reported that the efforts to connect Kokee Park, Kauai, Hawaii and Wettzell, Germany to Haystack are continuing, hopefully beginning to bear fruit within the next month or so.
- Tom reported ISI is submitting proposal to NASA CAN for further development of high-data-rate real-time data over shared network in collaboration with Haystack Observatory and

NASA. e-VLBI is a major application that would benefit from this work. The proposal is due 26 Nov 02 with decisions to be announced late Feb 03.

### Direct-transfer e-VLBI experiment

Alan reported that a successful direct-transfer e-VLBI experiment was conducted on 24 Oct, just two hours before Verizon pulled the plug on the ISI-E to Eckington connection! Due to operational constraints at Westford, which was involved in scheduled observations at the time, GGAO had to piggyback onto the Westford operating at the same 256 Mbps mode. A direct real-time transfer of data was made from GGAO to Haystack at 256 Mbps (actually, 288 Mbps with parity overhead) where it was recorded on disk. Correlation with the Westford data produced normal fringes.

There was a lot of scrambling done on a very short fuse to make this experiment happen and much thanks is due to everyone involved.

### Report Outline

**The goal for the first draft of the final report has been moved to Monday, 9 Dec 2002.** Please send your contributions to Alan, who will act as editor and prodder.

Executive Summary - Alan

Introduction - Alan

What is VLBI? - Alan

Why e-VLBI? - Alan

Goals of the 1-Gbps e-VLBI Demonstration - Alan

Elements of the 1-Gbps Demonstration

Mark 5 VLBI Data System – Alan

Westford connection - Alan

Glownet/Bossnet – Steve/Lorraine/Peter

ISI-E/Max – Tom/Jerry

GSFC Networks – Pat/Bill F./Paul/Kevin K./Dan

Haystack/GGAO – Kevin D./Alan/Bill W.

Testing and Performance – Tom/Bill F./Kevin K./Kevin D.

Results of e-VLBI Demonstration – Alan

Recommendations for further work/Future Directions in e-VLBI - All

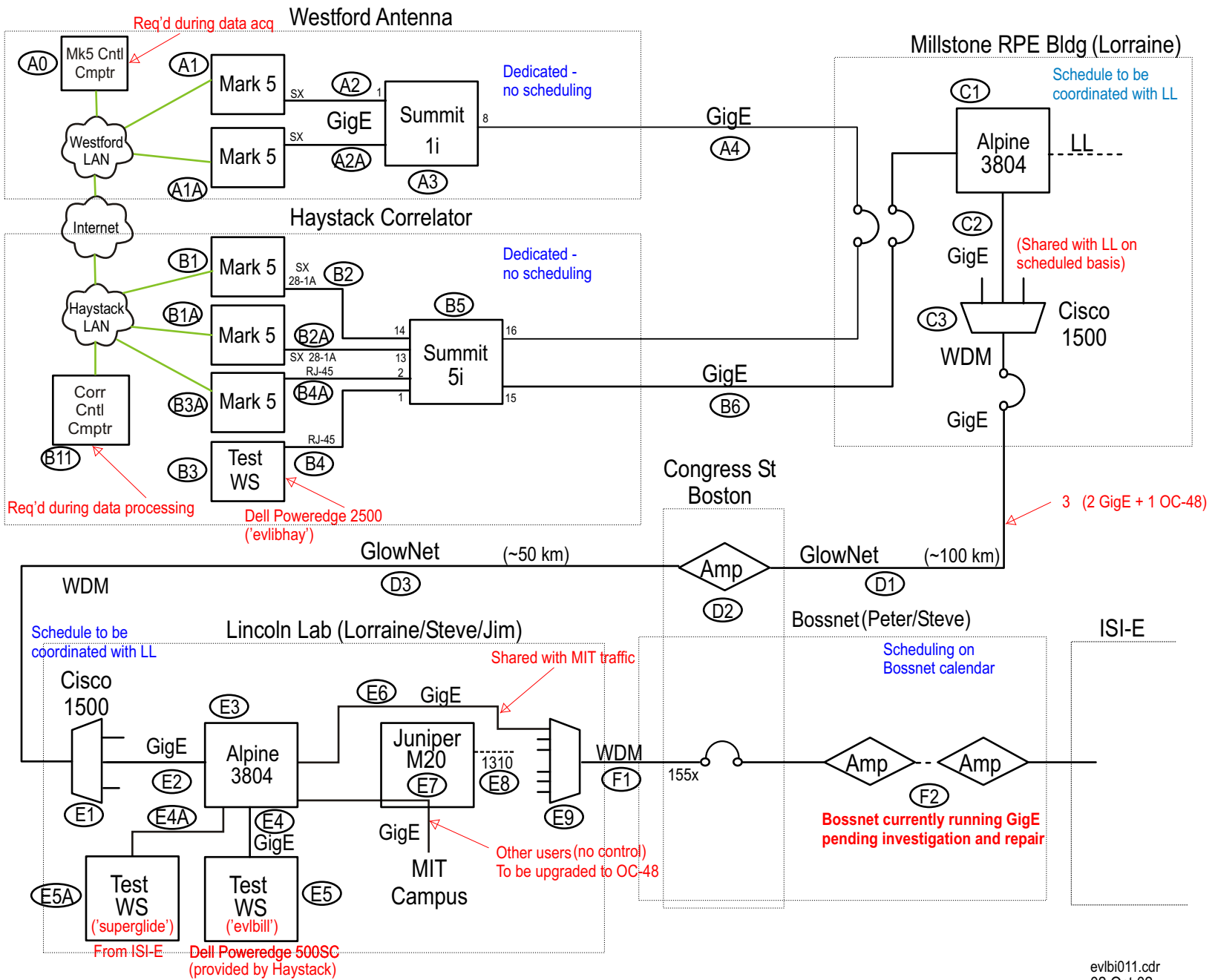
Summary - Alan

### Next telecon

Next telecon is scheduled for **Wed, 18 December 2002** 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



evlbi011.cdr  
02 Oct 02

Figure 1: e-VLBI Path - Haystack to ISI-E

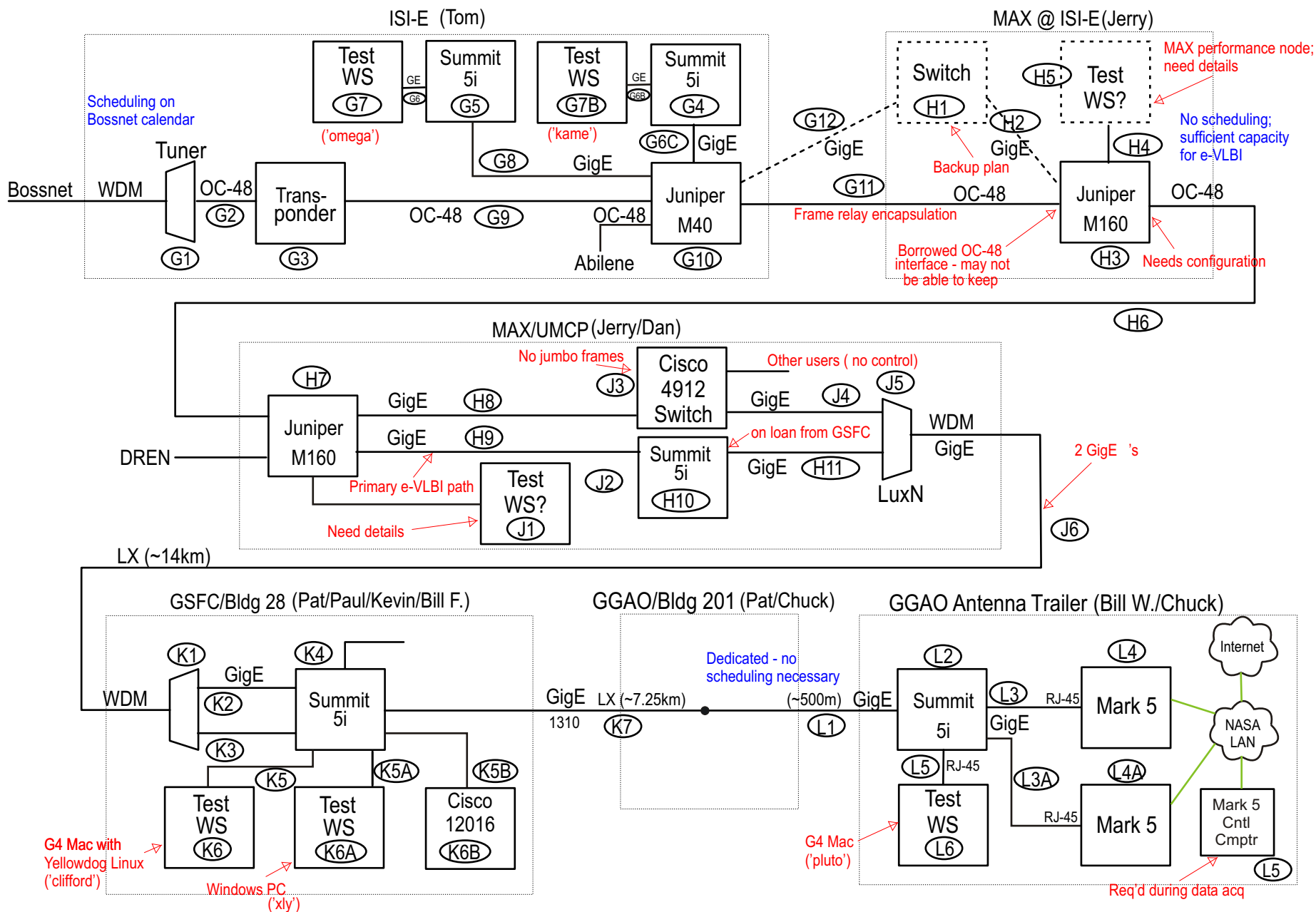


Figure 2: e-VLBI Path - ISI-E to GSFC/GGAO