

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

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23 October 2002

TO: Distribution
FROM: Alan R. Whitney
SUBJECT: 23 October 2002 e-VLBI telecon summary

Attendees:

Lee Foster, Paul Lang – GSFC

Tom Lehman - ISI

Steve Bernstein, Peter Schultz – MIT Lincoln Labs

Kevin Dudevair, Hans Hinteregger, Arthur Niell, Mike Titus, 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:

- Peter reported that Bossnet remains operational in GigE mode. Service may be upgraded again to OC-48 when the new Qwest fiber is in place from ISI-E to Eckington (where Bossnet connects).
- Tom reported that the ISI-E/Eckington link may go down anytime starting tomorrow morning (24 Oct) as Verizon discontinues service. Qwest has the contract for the replacement fiber, but Tom is not certain when that will be in place; it could be up to few weeks!
- On 15 Oct 02 the world's first (we believe) successful international e-VLBI experiment was conducted between Kashima, Japan and Haystack Observatory. At Haystack the data were recorded on the Mark 5 system and at Kashima data were recorded on the Japanese K5 system. Data were transmitted via Abilene and GEMnet (across Pacific Ocean). The observed data rate was ~1.6Mbps, considerably lower than the 20 Mbps expected; the cause is being investigated. Data were sent in both directions and correlated at both Kashima and Haystack. The results were nominal. We plan to continue a low level of experimental activity with e-VLBI to Japan.

- Alan reported that USNO plans to lease a dark fiber from GWU to USNO are moving along. Everything is ready to go as soon as agreement with MAX is reached on usage fees. Hopefully this issue will be settled in the near future so that things can move ahead
- Plans for a connection from Kauaii, Hawaii to Haystack, as discussed at the last e-VLBI telecon, are still moving forward, but slowly.

Next e-VLBI experiment

The next e-VLBI experiment to attempt a direct data transfer from GGAO to Haystack was originally scheduled for later this week or early next. But, as a result of the imminent downtime on the link from GGAO to Haystack, as well as scheduled downtime on the GGAO antenna starting within a few days and lasting up to a month, a decision was made to try to do a quick experiment on Thursday morning (24 Oct). This will require some scrambling in order to get everything in place. [Postnote: It worked! The experiment was successfully conducted just two hours before Verizon pulled the plug on the network!]

Report Outline

After some discussion, the outline was modified to add 'Westford connection' as follows:

- 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

Goal is to have first draft by end Nov 2002 and final report ready to submit for publication by end Dec 2002. To be included as well: network diagrams, performance graphs, and e-VLBI results.

Everyone is asked to distribute draft material for comment; Alan will act as editor and prodder. We expect final report will be 10-15 pages in length.

Next telecon

Next telecon is scheduled for **Wed, 20 November 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

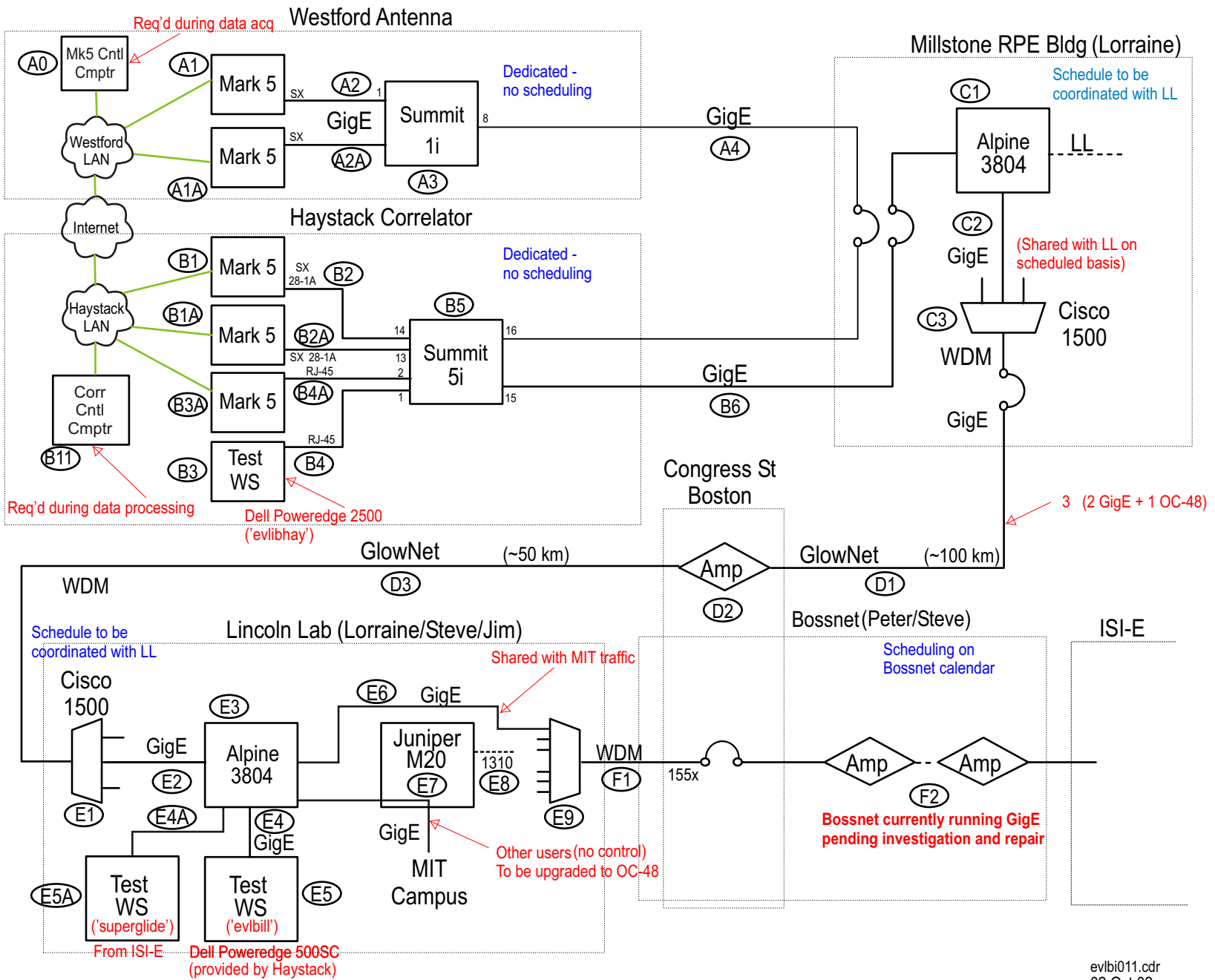


Figure 1: e-VLBI Path - Haystack to ISI-E

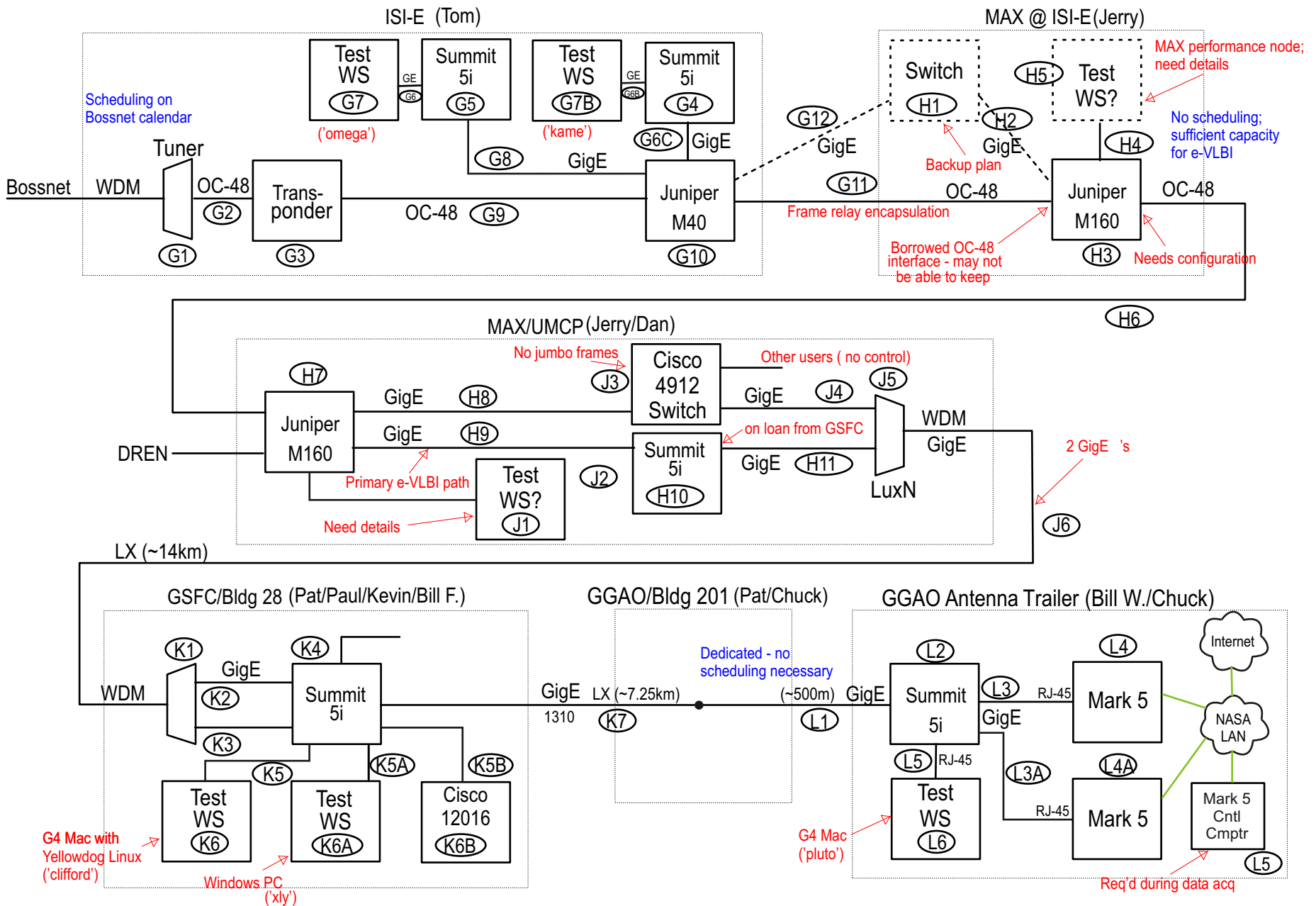


Figure 2: e-VLBI Path - ISI-E to GSFC/GGAO