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1 May 2003

TO: Distribution

FROM: Alan R. Whitney

SUBJECT: 28 April 2003 e-VLBI telecon summary

Attendees:

Lee Foster, Pat Gary, Kevin Kranacs, Paul Lang, Bill Wildes – GSFC

Tom Lehman – ISI-E

Russ Roberge, Peter Schulz – MIT Lincoln Lab

Kevin Dudevoir, Hans Hinteregger, David Lapsley, 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.

Dell 5224 GigE Switch Testing

Russ reported results of preliminary testing on the Dell 5224 switch (identical to SMC TigerSwitch 8624T according to PC Magazine, 27 May 02, p.116). He found that the optical ports passed throughput testing with no problems, but the copper ports always failed the first two throughput tests and worked thereafter. A new firmware update has been obtained which may fix this problem; Dell has also been contacted directly. Further testing will be done. Russ will write and distribute a report on the results of this testing. Tom asked if latency and jitter testing has been done; Russ will look into the possibility.

Glownet/Bossnet

 – Peter reported LL is continuing negotiations with Qwest for lease of Bossnet.

 – Additional testing of OC-48 is pending; Tom expects he will be able to support this testing next week.

 – If Bossnet goes away, Haystack will be hard-pressed to find an affordable alternate connection to Abilene. Technically, it is possible for a 'Haystack wavelength' to be stripped off Glownet at Congress St where it could connect to NOX, but Haystack would have to bear the charges for the separate connection to NOX (estimated at ~$100K/yr for a GigE connection).

 – LL maintains a throttled (to ~400Mbps) GigE connection to NOX at Congress St., separate from MIT's GigE connection.

<u>Network Connections</u>

– Regarding the network diagram (attached), Pat pointed out that H6A in the diagram is there for future reference when 10 Gbit is available; also shows the future USNO connection.

– The attached network diagram shows only Abilene and DREN as external networks when there are many other external connections. These are placeholders for other potential e-VLBI connections (Hawaii, for example)

– Pat asked why USNO is not a DREN site. Alan answered that USNO is currently not connected to DREN and the bureaucratic obstacles to a DREN connection to USNO appear to be formidable.

– Pat requested that Alan send copies of the network diagrams in their native format that other people can modify and mark up.

– Tom Lehman and Jerry Sobieski are proposing to NSF the development of an advanced infrastructure which, if successful, would support advanced services include some connections at 10Gbps and would be very useful for e-VLBI.

<u>Network Testing</u>

Pat suggested that regular testing of connectivity over paths of the Haystack/Bossnet/ISI/MAX/GSFC/GGAO network would help to quickly identify any network changes or problems so that immediate remedial actions can be taken. Andy Drecker(sp?) at GSFC has put together a script to do testing (connectivity and throughput) for 30 seconds of every hour and then displays a time history of the results. Everyone agreed this is an excellent idea; only problem is that Haystack must schedule usage of Bossnet. Pat will distribute more detailed information.

<u>Hawaii Connection</u>

– Equipment is now in place for the connection to Hawaii. Kevin has done some testing. From Hawaii to Haystack, traffic is routed across the U.S. on Abilene; however, from Haystack to Hawaii, traffic is routed onto DREN (lower bandwidth) at Eckington and is filtered when reaches the U. of Hawaii router. The routing onto DREN is due to Abilene usage policy that says that traffic with a federal destination is routed onto a federal network (DREN) at the earliest possible point. This may be OK since the high-bandwidth path is from Hawaii to Haystack; Kevin will do further testing. Kevin will contact the relevant person at U. of Hawaii to request modification of the firewall to let the Haystack-to-Hawaii packets through.

– Alan will include a connectivity diagram showing the connections to Hawaii and the potential connection to USNO.

<u>Japanese Connection</u>

Kevin reported that quite a bit of e-VLBI data has been transferred to/from Japan. Connection is slow due to small frame sizes. Kevin is working with Japanese to tune, but Japanese are using FreeBSD which is causing Kevin some problems. After tuning, rates should increase substantially.

<u>Next telecon</u>

Next telecon is scheduled for Mon, 19 May 2003 at 2 pm EDT.

xc: Steve Bernstein, LL
Jim Calvin, LL
Rick Larkin, LL
Lorraine Prior, LL
Peter Schulz, 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-E
Jerry Sobieski, MAX
Richard Crowley, Haystack
Kevin Dudevoir, Haystack
Hans Hinteregger, Haystack
David Lapsley, Haystack
Arthur Niell, Haystack
Joe Salah, Haystack
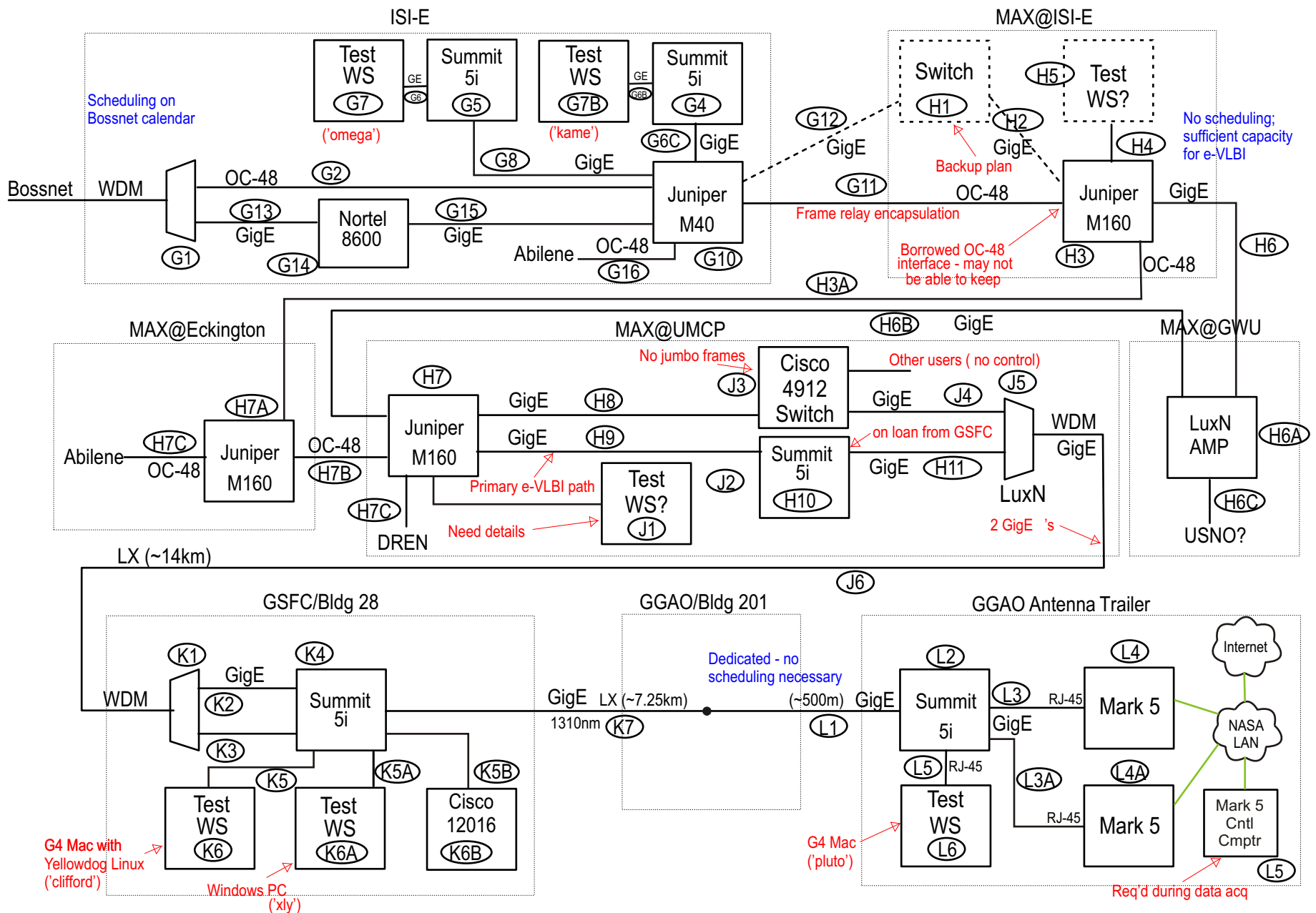
Figure 1: e-VLBI Path - Haystack to ISI-E

evlbi011.cdr
27 Mar 03

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

evlbi012.cdr
27 Mar 03