MASSACHUSETTS INSTITUTE OF TECHNOLOGY

HAYSTACK OBSERVATORY

WESTFORD, MASSACHUSETTS 01886

Telephone: *978-692-4764*
Fax: *781-981-0590*

28 November 2001

TO: Distribution

FROM: Alan R. Whitney

SUBJECT: 26 November 2001 e-VLBI telecon summary

Attendees:
Lee Foster, Pat Gary, Paul Lang, Bill Wildes – GSFC
Tom Lehman – ISI
Jerry Sobieski – Max
Steve Bernstein, Jim Calvin, Lorraine Prior – Lincoln Laboratory
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.

Status Reports

Jerry Sobieski (Max)

 – At ISI, the Max Juniper M160 has a borrowed OC-48 interface (~$40K) that connects to ISI; temporary arrangement for supercomputing, but no current move to tear down. A more formal arrangement may be possible with ISI joining Max, in which case there would probably be a GigE connection between the Max M160 and the ISI M40.

 – M160 patch expected soon to increase MTU to ~9180 bytes.

 – Quickest and easiest - GigE from ISI to GSFC. If inadequate, need additional hardware.

 – Interested in seeing what performance difference is between jumbo and non-jumbo frames.

Tom Lehman (ISI-E)

 – Switches at ISI will handle jumbo frames, other than one that ties into Max, but Tom has extra switches that handle jumbo frames that could be placed into service for demo.

 – Summit 1i (all fiber) is $7-8K (educational discount) with maintenance.

 – Summit 5i with 12 copper and four Gbit ports ~$9-11K (GSA?) with maintenance

 – pursuing OC-48 link to Bossnet

Bill Wildes (GSFC)

- − Group 291 team will be running fibers at GGAO from Bldg 202 to antenna trailer
- − Waiting for fiber to be delivered; will require 1-2 weeks for installation; most likely January before done
- − Ordered Summit 5i may have stretched delivery; Pat Gary may be able to loan something in place.

Pat Gary (GSFC)

- − Summit 5i switch has arrived (not ordered for e-VLBI). Have also bought couple of G4 Macs with GigE NIC cards; being tested.
- − Have bought muxes from LuxN to support 2λ coarse WDM between GSFC and UMCP; not yet deployed; will improve connectivity from GSFC Bldg 28 to Max POP at UMCP.
- − GSFC progress currently paced by availability of fibers in certain places and setting up terminal equipment
- − estimate that in 1 month most things will be up and running and tested at GSFC end

Lee Foster (GSFC)

- − Has dual-1GHz-Athlon machine with 3C996 1GigE NIC under Win 2K Pro; interested in performance testing.

Lorraine Prior (LL)

- − 2 switches ready to be deployed to Haystack; Summit 1i for Westford; Summit 5i for Haystack comm. closet Rm 13E. Fiber installed from Rm 13E to correlator in Rm 28.

GigE Performance Tests

Haystack has two Linux workstations with SysKonnect 9843 NIC's. Expect to begin benchmarking in next few days.

Pat reported some testing is now taking place among Mac's; will share results.

Jerry indicated that a couple of FreeBSD nodes with SysKonnect cards are co-located with (and directly connected to) the Max M160 and can be configured for performance testing.

Connection to USNO

Tom Lehman will follow-up with Jerry Sobieski regarding a possible high-speed connection to USNO.

Scheduling Issues

Steve and Jim (LL) are looking to create a simple plan for scheduling access from Haystack to ISI-E through Bossnet.

Tom Lehman indicated that Supernet maintains an activity calendar at <http://www.ngi-supernet.org/>; request form for calendar entries can be made at this website. This looks like a good vehicle for helping to schedule and co-ordinate e-VLBI testing.

Pat suggests that a regular schedule be set for testing, perhaps weekly during weekday. Seems like a good idea. Big gap around holiday, particularly at universities, that might be useful to try to use, but may be too soon. Jerry thinks Max probably will not be bothered by e-VLBI testing.

Pat suggests that a goal of making available a performance/connectivity testing machine at intermediate points along the path.

- Haystack
- Lincoln Lab
- Max POP's at UMCP and ISI-E (some FreeBSD machines may already be available)
- ISI-E Supernet
- GSFC Bldg 28
- GGAO

Action Items

Steve: Coordinate LL activities with SuperNet web calendar.

All: Volunteer a test workstation at each node and provide account for testing; machine name, IP address and local point-of-contact will be compiled into list.

Jerry: Detailed accounting of boxes and interfaces in path between ISI-E and GSFC.

Steve (carried forward): Investigate possibility of setting up LL non-privileged accounts for testing from GSFC.

Steve: Does OC-48 Bossnet upgrade include OC-48 LL/MIT campus connection as well?

Tom (carried forward): Connectivity to USNO?

All: Start conducting performance tests where possible.

Next telecon

Next telecon will be Monday, 17 Dec 2001 at 2 pm.

xc: Steve Bernstein, LL
        Jim Calvin, LL
        Lorraine Prior, LL
        Leslie Weiner, LL
        Herbert Durbeck, GSFC
        Lee Foster, GSFC
        Pat Gary, 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