Minutes of X3T11 HIPPI SWG, and HNF - Technical Committee (TC)
June 13, 1995
Rochester, Minnesota

1. Opening remarks and introductions

The Chairman, Don Tolmie of Los Alamos National Laboratory, opened the meeting at 1 pm and thanked Horst Truestedt and IBM for hosting this meeting. This group is constituted as both the HIPPI special working group (SWG) under X3T11, and the HIPPI Networking Forum (HNF) - Technical Committee (TC). Don then lead a round of introductions.

The meeting attendees were:

Jim Toy	Broadband Communications
Mark Kelley	Cray Research
Bob Kowalski	Cray Research
Michael McGowen	Essential Communications
Roger Ronald	E-Systems
Don Tolmie	Los Alamos National Lab
Tim Clay	Methode Electronics
Will Leslie	NEC
Scott Hauck	NetStar
John Renwick	NetStar

Don Tolmie agreed to take the meeting minutes. These minutes reflect the items on the approved agenda.

2. Approval of the Agenda

A draft agenda was distributed before the meeting via e-mail; no changes were made at the meeting. These minutes represent the approved agenda.

3. Review Minutes of Previous Meeting

The minutes of the X3T11 HIPPI SWG / HNF - TC meeting of April 4, 1995, in Monterey, California, were reviewed. Jim Toy moved, and Scott Hauck seconded, to accept the minutes as written. Passed unanimously.

Don Tolmie noted that the previous minutes are now available on the HNF WWW page at http://esscom.com/hnf/. They are also available in Postscript format via anonymous ftp from ftp.network.com/hippi/minutes.

4. Review of old Action Items

The action items from the April, 1995, meeting were reviewed for the current status.

1. John Renwick of NetStar – Talk to Phil Cameron of Essential Communications about revising the HIPPI end-point MIB and then resubmitting it to IETF. (Carryover)
2. Michael McGowen of Essential Communications – Further the address self-discovery work based on John Renwick's proposal. (Carryover)
3. Michael McGowen for Essential Communications – Contact vendors with APIs about using their APIs as the basis for a standard HIPPI API. (Done)
4. Don Tolmie of Los Alamos – Flesh out the proposal for HIPPI-MFP some more. (Carryover)
5. Don Tolmie of Los Alamos - Look into making the minutes available on the WWW. (Done - minutes are now available on WWW.)
6. Don Tolmie of Los Alamos - Request that X3T11 take the appropriate steps to reaffirm ANSI X3.183-1991, HIPPI-PH. (Done - X3T11 Chair determining appropriate procedure.)
7. Don Tolmie of Los Alamos - Request that X3T11 forward the SD-3 Project Proposal for HIPPI-Serial as a Standard to OMC. (Done - X3T11 Chair taking appropriate actions.)
8. Don Tolmie of Los Alamos - Propose wording for HIPPI-Serial conformance to HIPPI-PH electrical and timing specifications. (Done - review at this meeting.)
9. Don Tolmie of Los Alamos - Contact Hewlett-Packard about complying with the ANSI patent statement for the 20b/24b coding used in HIPPI-Serial. (Done - Papers sent to Hewlett-Packard, no response yet.)
10. Ken Powell of Silicon Graphics - Investigate the possibility of using the SGI HIPPI API as the starting point for a standard HIPPI API. (Done - API released and FrameMaker files made available.)
11. Phil Cameron of Essential Communications - Consider the use of the Fore Systems API for ATM as the starting point for a standard HIPPI API. (Carryover)
12. Stephen Quan of NASA Ames - Get the ftp address where the Fore API is located. (Done)
13. Brian Falk of NetStar - Present the concept of variable granularity in the HIPPI-ATM

Burst_Length field to the NetStar designers and relay comments to Don Tolmie. (Done - review Tolmie's proposals at this meeting.)

5. HIPPI-Serial

5.1 Distribution of HIPPI-Serial Rev 1.4 and Change List

Don Tolmie distributed HIPPI-Serial Rev 1.4 and a change list between Rev 1.3 and Rev 1.4. These documents were also available via anonymous ftp from ftp.network.com/hippi a week before the meeting. Don noted that the major changes included (1) short wavelength optics have been added, (2) the INTERCONNECT signal is now driven by a resistor instead of light changes, and (3) text was added to specify and clarify the signal timing relationships to HIPPI-PH.

5.2 Short-wavelength optics for HIPPI-Serial

At the previous meeting, Jim Toy of Broadband Communications said that some concern has been raised about using the short-wave optics with long run-length codes -- and HIPPI-Serial has a run length of 33 bits. For comparison, the majority of the short-wavelength testing has been done with the Fibre Channel 8b/10b coding with a run length of about 5 bits. Tim Clay of Methode reported that they have tested with ATM cells and did not see degradation over FC coding. There are no known testers with 33-bit run lengths, but ATM can be close to this. Hence, this does not seem to be a problem.

The document has been given to some Fibre Channel short-wavelength laser experts for their review.

5.3 Review HIPPI-Serial Rev 1.4

The changes between revisions 1.3 and 1.4 were reviewed. The INTERCONNECT signal has changed from a logic signal signifying light present and clock locked, to a static resistor driving signal. Comments received indicated that some people preferred the logic signal; saying it provided more information. The meeting attendees pointed out that the resistor drive was consistent with HIPPI-PH, and the logic signal was more confusing than useful. It was agreed to retain the resistor method, and not to include the logic method as an option.

Text clarifying the serial stream and its relationship to HIPPI-PH requirements was added, and reviewed. Copying parts of HIPPI-PH to an annex resulted in some comments, but the comments were overcome when it was pointed out that the annex was informative only. Everyone was urged to closely review clause 5.8 and annex C, and suggest any preferred wording.

A few corrections and changes were suggested and will be integrated in the next revision.

6. IETF related items

6.1 RFC 1374

John Renwick of NetStar reported that RFC 1374 was broken into two RFC drafts, but they have expired with time. These drafts proposed limiting the possible options to make interoperability more likely. John had requested comments, but none have been received yet. John took an action item to make the drafts available via ftp in an effort to revive this work and push it along.

6.2 HIPPI MIB

John Renwick of NetStar reported that NetStar has their MIBs available on their web page at ftp.netstar.com/mibs. The original draft HIPPI MIB is now an expired Internet draft. John removed one object a while back. Phil Cameron of Essential Communications had provided some suggestions concerning the counters. John felt that there were too many counters, and that values should be read as deltas rather than resetting the counters. John took an action item to put out a revised draft, and requested comments from everyone. Cray Research may implement the MIB soon.

7. Network Management

7.1 Address self-discovery

Michael McGowen of Essential Communications reported on-going work on an address self-discovery algorithm that should be worked into the HIPPI-ARP document for IETF.

7.2 HIPPI-SC Auto

Michael McGowen of Essential Communications reported that he is still waiting for comments on the existing HIPPI-SC Auto draft document. There are no changes since the last draft. It presently does not require any HIPPI-PH changes. HIPPI-SC Auto should be processed as an ANSI standard.

8. HIPPI-SC

8.1 Proposed wording for HIPPI-PH conformance

Don Tolmie proposed to base the wording in HIPPI-SC on the wording agreed to for HIPPI-Serial. The major difference will be that HIPPI-SC needs to allow either HIPPI-PH or HIPPI-Serial ports. Don also issued a call for submission of any other proposed changes to HIPPI-SC.

John Renwick noted that the previous two NetStar proposals for address self-discovery and a logical loop-back address should be considered. Logical loop-back should be possible with most of today’s switches, i.e., by setting the switch’s routing tables appropriately, loop-back can be performed whenever an all 1’s loop-back address is seen. Address self-discovery is somewhat harder as it requires the switch to substitute an address supplied by the switches in place of a self-discovery Source address. Every effort will be made to avoid invalidating existing switches, e.g., by making address self-discovery optional. This may not be too hard; if a HIPPI node performs an address self-discovery with a loop-back operation and the HIPPI node finds that the Source self-discovery address was not replaced, then it is obvious that the switch does not support self-discovery. The question of whether to couple the loop-back and address self-discovery into one function was discussed, and rejected on the grounds that a coupled function would be more difficult to implement than separate functions.

John Renwick took an action item to draft HIPPI-SC annex material describing how address self-discovery is intended to operate. Don Tolmie will check with Ken Hardwick of Network Systems to see if he wishes to continue as the Technical Editor for HIPPI-SC.

9. HIPPI API

9.1 Distribution of SGI HIPPI-API

Ken Powell of Silicon Graphics obtained release of SGI's HIPPI API for use as a starting point for a generic HIPPI API. Questions over whether the SGI copyright statement needed to be included in derivative documents has been favorably resolved, and SGI is supplying a release letter to the HNF. Ken supplied a Postscript version of SGI's document, and the FrameMaker files used to generate it. Hard copies of the document were distributed at this meeting.

The question was raised as to whether the vendors that already have developed their own APIs would be willing to change them to conform to a standard developed by the committee. It was also noted that there are two possible models, one socket based and the other I/O driver based. It was agreed that we need to get the functionality correct, and should work on the service requirements for compliant APIs. After this, we can decide where to take it from there. Michael McGowen volunteered Ted Schroeder of Essential Communications to work on it. BJ Kowalski of Cray Research also expressed an interest.

9.2 Plans for API document

The question of how we should process a HIPPI-API was discussed. Possibilities include (1) as an ANSI standard, (2) as an X3 Technical Report, and (3) as an internal HNF document. Currently, an internal HNF document, much like the Fibre Channel “profile” documents, seems best.

10. HIPPI-ATM

10.1 "Granularity" change for Burst Length

At the April meeting in Monterey, Brian Falk of NetStar expressed a desire for larger ATM PDU's. The current document limits the PDU size to 2 KBytes. In response, Don Tolmie presented a proposal at this meeting for a "granularity" bit in the header. This allowed the PDU to go up to the maximum supported in AAL5, i.e., 64 KBytes. While Don’s proposal seemed to work, there was some worry expressed about whether it was easy and efficient to implement in software. John Renwick and Scott Hauck of NetStar felt that it was too early to select a single method, and that more research with implementations was needed.

10.2 Are we ready to forward HIPPI-ATM ?

It was agreed to hold the HIPPI-ATM document in abeyance, delaying forwarding the document until implementations have a chance to try different methods. The hope is to have this research done by August.

11. Higher speeds by using multiple HIPPI-FP lower layers

The proposal in Sarasota envisioned a segmentation and reassembly (SAR) protocol sitting above multiple HIPPI-FP entities. Don Tolmie reported that he has started a draft document, called HIPPI-MP for multiple path, but it was not ready for review. Comments were made that the concept seemed useful and needed.

12. Speeds in the 8x to 10x range

Don Tolmie announced that Los Alamos was hosting a by-invitation workshop in Albuquerque on June 19-20 to discuss where Los Alamos should apply their efforts. The Los Alamos goal is to facilitate interconnections between the heterogeneous mpp's and other high end platforms. It was felt that Los Alamos was successful in leading the HIPPI effort, and this workshop is addressing the next generation. The results of the workshop will be shared with the HNF. Nothing else was done at this Rochester meeting since Jim Hughes of Network Systems was not in attendance.

13. Other items

No other items added at the meeting.

14. Future meeting schedule

The next meeting of the X3T11 HIPPI SWG / HNF Technical Committee, will be Tuesday, August 8, 1995, 1 PM to 5 PM, at the Westchester Marriot Hotel, 670 White Plains Road, Tarrytown, New York 10591, phone (914) 631-2200, or (800) MARRIOT. Refer to "ANSI IBM meetings" when making your reservations to get the group rate of $110 single or double, + 10% tax. The cutoff date for reservations is July 14. NOTE - the hotel's phone number was wrong on pervious announcements, use the phone number above instead.

Future 1995 meetings, and hosts, are scheduled for:

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Oct 3  Toronto, Canada  HP-Canada
Dec 5  San Diego        ENDL
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1996 meetings are currently scheduled for:

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Feb 6    San Diego, CA       Vitro
Apr 10   Palm Beach, CA      Western Digital
June 11  Santa Fe, NM        Los Alamos
Aug 6    Boulder, CO area    StorageTek
Oct 8    St. Petersburg Beach, FL     AMP
Dec 3    San Diego, CA           ??
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The 1997 meeting dates selected by X3T11, and the preliminary hosts, are listed below.

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Feb 3-7
Apr 7-11  Palm Springs, CA  Western Digital
Jun 9-13
Aug 11-15
Oct 6-10
Dec 1-5
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Boeing felt that they could host in Seattle for June or August of 1997. Hosts for the other dates are being solicited.

15. Review action items

1. John Renwick of NetStar – Talk to Phil Cameron of Essential Communications about revising the HIPPI end-point MIB and then resubmitting it to IETF.
2. Michael McGowen of Essential Communications – Further the address self-discovery work based on John Renwick's proposal.
3. Don Tolmie of Los Alamos – Flesh out the proposal for HIPPI-MP some more.
4. Don Tolmie of Los Alamos - Propose wording for HIPPI-Serial conformance to HIPPI-PH electrical and timing specifications.
5. Don Tolmie of Los Alamos - Follow up with Hewlett-Packard to obtain the ANSI patent statement for the 20b/24b coding used in HIPPI-Serial.
6. Phil Cameron of Essential Communications - Consider the use of the Fore Systems API for ATM as the starting point for a standard HIPPI API.
7. Don Tolmie of Los Alamos - Check the minutes on ftp.network.com to make sure that the page headers are included.
8. John Renwick of NetStar - Make the derivative documents from RFC 1374 available on an ftp site.
9. John Renwick of NetStar - Update the HIPPI MIB.
10. Michael McGowen of Essential Communications - Draft address self-discovery proposal as a step-wise process.
11. John Renwick of NetStar - Draft annex material for HIPPI-SC describing the intent of address self-discovery and how it works.
12. Everyone to consider changes to HIPPI-SC, and submit drafts of their proposed changes.

13. Don Tolmie of Los Alamos - Check with Ken Hardwick of Network Systems as to whether he wants to continue as Technical Editor of HIPPI-SC.
14. Everyone - Get comments on proposed changes to HIPPI-ATM to Don Tolmie of Los Alamos for final review in August.

17. Adjourn to the HNF plenary meeting

The meeting was adjourned at 5:00 pm. An HNF Plenary meeting wrap-up immediately followed.

A summary of the HNF-TC meeting was presented to the HNF people who had been in the HNF Marketing meeting, and the marketing meeting also presented a summary of their meeting.

Notes from X3T11 Plenary following the HNF-TC

The X3T11 Plenary meet the next day, i.e., June 14. HIPPI related items are reported here for your convenience, the definitive record is the X3T11 minutes.

Our previous action to reaffirm X3.183-1991, HIPPI-PH, turned out to be premature. The current procedures are that X3 will send us a query four years after the publication date, with action required within one year. Hence, we should be informed about HIPPI-PH in November 1995, with final action required by November 1996.

The amendment to HIPPI-FP passed its first public review with the only comments coming from the ANSI editor. Don Tolmie has included the comments in an updated document, and forwarded it to the X3 Secretariat. The next step is an X3 letter ballot and then publication.

X3T11 was requested to respond to ISO DIS (Draft International Standard) letter ballots on HIPPI-FP, -LE, and -SC. Roll call votes at this X3T11 meeting were "in favor with no comments". ISO New Projects have been initiated for HIPPI-ATM and HIPPI-Serial, with ISO numbers 11518-8 and 11518-8 assigned respectively.

The separate project proposals for HIPPI-Serial as a Technical Report, and as a standard, caused confusion in OMC. An X3T11 roll-call vote passed to have OMC convert the approved project proposal from a Technical Report to a standard.

HIPPI-FC, the mapping of upper-layer Fiber Channel protocols to use HIPPI-FP as a lower layer, passed its X3T11 letter ballot with a few comments. X3T11 forwarded HIPPI-FC for an OMC compliance review and then first public review.

FC-FP, the mapping of upper-layer HIPPI protocols to use Fibre Channel lower-layers, has been approved and published as ANSI standard X3.254-1994.

The FC-0 group reported on a jitter problem that may also affect HIPPI-Serial.

It was noted that Network Systems has changed their ftp server — it now only answers to address ftp.network.com. Address nsco.network.com is no longer valid.