Minutes of X3T11 HIPPI SWG, and HNF - Technical Committee (TC)
February 8, 1995
Sarasota, California

1. Opening remarks and introductions

The Chairman, Don Tolmie of Los Alamos National Laboratory, opened the meeting at 1:30 pm and thanked Charles Brill and AMP 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
Michael McGowen	Essential Communications
Craig Stoops	IBM Austin
Don Tolmie	Los Alamos National Lab
Chris Olson	Loral Defense Systems
Tim Clay	Methode Electronics
Kerry Rye	Myriad Logic
John Renwick	NetStar
Tom Gilbert	Network Systems Corp
Bud Binck	Tri-Plex Systems Corp.

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

2. Approval of the Agenda

The draft agenda distributed at the meeting was accepted. These minutes represent the approved agenda.

3. Review Minutes of Previous Meeting

The minutes of the X3T11 HIPPI SWG / HNF - TC meeting of December 6, 1994, in San Jose, California, were reviewed and accepted as written.

4. Review of old Action Items

The action items from the December, 1994, meeting were reviewed for the current status.

1. John Renwick of NetStar – Check on possible existing implementations of his proposals for address self discovery. (Done – none found)
2. Michael McGowen of Essential Communications – Publish any alternative proposals for address self discovery on the reflector. (Done – discussed with John Renwick of NetStar)
3. Ted Schroeder of Essential Communications – Publish a HIPPI API proposal on the reflector. (Carryover)
4. Jim Toy of BCP – Draft words for Serial-HIPPI to address short-wave optics, and cleanup of the overhead bits based on implementation experience. For presentation at February meeting. (Done)
5. Pat Gilliland of Methode - Draft words for short-wave optics for inclusion in Serial-HIPPI. (Done – Presented by Tim Clay of Methode)
6. Chris Olson of Loral – Look into the possibility of making Serial-HIPPI a MIL standard. (Done – Not recommended due to the government going away from MIL standards except for hostile environments)
7. Michael McGowen of Essential Communications to make HIPPI-SCauto available via ftp from ftp.network.com. (Done)

5. HIPPI-Serial

5.1 Short-wavelength optics

Tim Clay of Methode Electronics presented a joint proposal, endorsed by a large group of companies, that is also being proposed to the ATM Forum and the Fibre Channel and Scalable Coherent Interface (SCI) groups. Representatives of the different groups have been meeting, and agreeing on a set of parameters that can be used by all of them. The goal is common parts for the different applications. All of the proposals use low-power short-wavelength lasers that meet Class 1 laser safety requirements without using shutters or open-fiber control circuitry. The laser cost is expected to be about one-fourth the cost of a 1300 nm laser, significantly reducing system cost.

Jim Toy suggested modifying the proposal by limiting the distance over 62.5/125 fiber from 500 meters to 300 meters. Jim also suggested that the fiber plant needed additional parameters.

With these additions, the working group unanimously accepted inclusion of the short-wavelength variant as an option in HIPPI-Serial. The parameters presented by Tim Clay, as modified above by Jim Toy, will be used.

5.2 CONNECT-READY timing

A problem with the relative timing between the CONNECT and READY signals showed up at Supercomputing'94 in November. Don Tolmie presented some proposed text based on some e-mail discussions. The proposal started with text describing how CLOCK pulses may need to be dropped or inserted once every 5000 or more CLOCK periods. Other text specified that the intermediate node, in this case a Serial-HIPPI implementation, must conform to HIPPI-PH specifications and suggests ways to dropping READY signals.

It was noted that the interoperability point was the serial stream, and the timing between CONNECT and READY must be specified here. Jim Toy took an action item to draft appropriate wording.

5.3 BURST-to-BURST timing

An older interface card in a Network Systems PS32 switch at Los Alamos created a problem by decreasing the time between BURST deasserted and BURST asserted to less than that allowed by HIPPI-PH. The problem only occurred when bursts were sent at the maximum rate, and there was more than one switch was in the data path. Replacing the interface card with a more recent version fixed the problem, i.e., NSC had fixed the problem before it showed up at Los Alamos. Don Tolmie proposed text to be added to HIPPI-Serial describing the problem in the hope that it would help prevent future occurrences.

After discussing the text proposed for both of the above problems, it was agreed that the proposed text may be going too far, and may create conflicts with HIPPI-PH. Michael McGowen took an action item to propose simplified text making HIPPI-Serial implementations conform to the HIPPI-PH specifications.

5.4 Make Overhead bits optional

HIPPI-Serial is now being implemented in a native fashion in workstation and switch interfaces, i.e., without an intervening HIPPI-PH copper interface. Operations associated with some of the Overhead bits do not seem to be appropriate on the native interfaces. For example, the remote loop back and the end-to-end asynchronous channel. Jim Toy presented a proposal to change all of the Overhead bits, except for OH8 which is used for framing, from mandatory to optional. The committee accepted this proposal unanimously. Jim took an action item to draft the appropriate text.

6. Network Management

6.1 RFC 1374

In October 1994 John Renwick split the original RFC 1374 into separate IETF Drafts for IP over HIPPI, and ARP on HIPPI. The IP over HIPPI draft called for a fixed format, e.g., no short first burst, and so far this has met with resounding acceptance. The one known implementor not conforming to the proposed limitations has not responded to the proposal.

Craig Stoops proposed that these limitations be documented in HIPPI-LE rather in the RFC. After some discussion, it was agreed to put the limitations in the RFC as they are only pertinent to IP.

6.2 HIPPI MIB

John Renwick has implemented the proposed HIPPI MIB for all except one object which is switch related. John has received a few comments on the MIB. John suggested removing some of the counters in the present MIB before furthering the standardization process; he felt that the first implementation had too many counters. No optional objects is a goal. The present MIB draft is within a few months of expiring in the IETF. John took an action item to talk to Phil Cameron of Essential Communications about revising the MIB and resubmitting it to IETF.

John feels the need for a separate MIB for HIPPI switches. The switch MIB would have readable and writeable objects while the end point MIB only has readable objects.

Michael McGowen requested that future work on the RFC not be listed under the Network Management agenda item.

6.3 Address self-discovery

John Renwick distributed a proposal he had made via e-mail in October 1994 for address self-discovery by using hex addresses FFF and FFE. Making sure that any changes did not invalidate existing HIPPI switches was discussed – the feature may be optional. Further work on specifying the error conditions was suggested, e.g., if FFE is not supported on a switch then the switch should do a connection reject upon receiving FFE. Michael

McGowen took an action item to further the address self-discovery work, and base it on John's proposal.

6.4 HIPPI-SC Auto

Michael McGowen had presented HIPPI-SCAuto at the December meeting, and made copies available via ftp. So far he had not received any comments. John Renwick commented that on his first read of the document it seemed somewhat complicated. John expressed a desire for something like HIPPI-SCauto to be available to configure SCinet at Supercomputing'95, avoiding the manual procedures used in pervious years. Michael felt that it was possible to get it in reasonable shape by then.

An address identifier may be needed to operate SNMP with the MIB. Addresses are obtainable from the Internet Assign Number Authority (IANA) of the IETF. Michael McGowen took an action item to get any appropriate address identifiers.

7. HIPPI-SC

7.1 Support for broadcast

George Rossmann and Avaika had made a proposal for broadcast on HIPPI switches, but they have not followed up in the committee. Several people expressed concerns over the proposal, and the lack of follow-up. It was agreed to drop this proposal from future agendas unless stronger support is shown. An action item was assigned to Avaika to support their HIPPI-SC broadcast proposal at the next meeting or the topic will be dropped from future agendas.

7.2 CONNECT-READY timing
7.3 BURST-to-BURST timing

The text proposed for HIPPI switches was almost identical that proposed for HIPPI-Serial. Hence, the discussion in 5.2 and 5.3 also applies here.

8. HIPPI API

The desire for a common API was expressed in the HIPPI Users Group Meeting at Supercomputing'94. We would like to base this on an existing implementation if possible, but do not have one yet. Michael McGowen took an action item for Essential Communications to contact vendors with APIs about using their APIs as the basis for our work.

9. Review HIPPI-ATM changes

Don Tolmie reported that he felt HIPPI-ATM was almost complete. Additional text specifying how to stripe over multiple ATM links had been requested, but Don reported troubles in doing it. Don presented a list of questions and solicited guidance from the committee on this topic. After some discussion it was agreed that specifying "how to" was a can of worms, and the present text alluding to the possibility of striping was sufficient. The Editors Note, and note about inverse multiplexing work in ANSI TIA, in 4.8 will be removed.

Subclause 5.4 specified using ATM OAM cells to check the validity of the ATM links, but did not specify what to do if an error was detected. This was felt to outside the scope of HIPPI-ATM. The committee agreed to delete this whole subclause.

John Renwick reported that their implementation was having trouble processing the HB_Header in software for each burst. He noted that by packing two HIPPI-PH bursts per HB_Header they had enough time. He also noted that the present header allowed this, i.e., by pretending that it was a 1600 Mbit/s interface. John also suggested that it would be useful to allow mapping an 800 Mbit/s to a 1600 Mbit/s interface, and vise versa. He suggested that it would probably only take a little work to support this. A bit in the HB_Header may be needed. It was also pointed out that there is the possibility that not all cases could be supported, e.g., short first burst on a double-wide interface may cause problems. This will be explored further.

Don Tolmie took an action item to make the approved changes to HIPPI-ATM, and investigate the single-wide / double-wide mapping.

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

Don Tolmie presented a half-baked proposal for what he called HIPPI-MFP, i.e., multiple FP. This proposal envisioned a segmentation and reassembly (SAR) protocol sitting above multiple HIPPI-FP entities. The committee suggested that things such as setting the segment size could be done by a management entity outside HIPPI-FP or -MFP. They also felt that making MFP a reliable transport layer was not necessary, e.g., requesting retransmission on error would not be a MFP function. A potential use is for data acquisition, e.g., radar data, where retransmission is not needed. Don Tolmie took an action item to flesh out the proposal some more.

11. Speeds in the 8x to 10x range

Nothing done at this meeting.

12. Other items

Nothing extra at this meeting.

13. Check status and work on if time available

13.1 LAN emulation for HIPPI

Nothing done at this meeting.

13.2 HIPPI-SCSI

Michael McGowen requested that this topic be removed from future agendas. There were no objections.

14. Prepare report for plenary

A summary report of this meeting was prepared and given orally to the HNF Plenary by Don Tolmie.

15. Future meeting schedule

The next meeting of the X3T11 HIPPI SWG / HNF Technical Committee, will be Tuesday, April 4, 1995, 1 PM to 5 PM at the Monterey Plaza Hotel, 400 Cannery Row, Monterey, California, phone (408) 646-1700. Refer to "ANSI/National Semiconductor" when making your reservations to get the group rate of $110 for a standard guest room ($150 for an ocean view). The cutoff date for reservations is March 1.

Future 1995 meetings are scheduled for:

June 13	Rochester, MN	IBM
Aug 8	Tarrytown, NY	IBM
Oct 3	Toronto, Canada	HP-Canada
Dec 5	San Diego	??

Note that the date of the October meeting is one week earlier than previously reported.

1996 meetings are currently scheduled for:

Feb 6	??	??
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	??

16. Review action items

1. Jim Toy of Broadband Communications – Draft appropriate wording for the relative positions of the CONNECT and READY signal changes in the HIPPI-Serial serial stream.
2. Michael McGowen of Essential Communications – Propose simplified text making HIPPI-Serial implementations conform to the HIPPI-PH specifications as far as the CONNECT-to-READY and BURST-to-BURST timing is concerned.
3. Jim Toy of Broadband Communications – Draft text for HIPPI-Serial to make the Overhead bits optional instead of mandatory.
4. John Renwick of NetStar – Talk to Phil Cameron of Essential Communications about revising the HIPPI end-point MIB and then resubmitting it to IETF.
5. Michael McGowen of Essential Communications – Further the address self-discovery work based on the John Renwick's proposal.
6. Michael McGowen of Essential Communications – Obtain whatever addresses identifiers are needed for SNMP to work with the HIPPI MIBs.
7. Avaika to support their HIPPI-SC broadcast proposal at the next meeting, or the topic will be dropped from future agendas.
8. Michael McGowen for Essential Communications – Contact vendors with APIs about using their APIs as the basis for a standard HIPPI API.
9. Don Tolmie of Los Alamos – Make the approved changes to HIPPI-ATM concerning striping and use of the OAM loop back cells.
10. Don Tolmie of Los Alamos – Investigate a single-wide / double-wide mapping for HIPPI-ATM.
11. Don Tolmie of Los Alamos – Flesh out the proposal for HIPPI-MFP some more.

17. Adjourn to the HNF plenary meeting

The meeting was adjourned at 5:20 pm. An HNF Plenary meeting wrap-up immediately followed.

Notes from X3T11 Plenary following the HNF-TC

The Amendment to HIPPI-FP (mainly for registering more ULP-id's) is in the last stages of approval at ANSI. They had lost this single-page document for a while, but are back on track now.

HIPPI-PH is in the process of being published as ISO/IEC standard 11518-1. HIPPI-FP, -LE, and -SC are being processed as Draft International Standards (DIS), the last international approval step.

The SD-3 Project Proposals for (1) an Amendment to the existing HIPPI-SC standard, and (2) an ANSI X3 Technical Report for HIPPI-Serial, passed OMC review and are currently being letter balloted in X3. The letter ballot closes March 6.

HIPPI-PH is due for its five year review. We need to either (1) reaffirm, (2) withdraw, or (3) revise, the document. The HIPPI working group needs to address this at its April meeting and present a recommendation to X3T11.

The SD-3 Project Proposal for ESCON as a standard passed an X3T11 letter ballot by the slimmest of margins. There had been a lot of discussion in X3T11 that ESCON also deserved to be processed like HIPPI-Serial, i.e., as a Technical Report rather than a standard. Based on ESCON becoming a standard, Dal Allan and other X3T11 members encouraged the HIPPI group to also propose HIPPI-Serial as a standard. NOTE - Don Tolmie will prepare an SD-3 Project Proposal for a HIPPI-Serial standard for discussion at the April HIPPI meeting. The SD-3 for the Technical Report will be allowed to continue and will not be withdrawn until we are more positive of the new SD-3 being approved.