

Minutes of T11.1 HIPPI Ad Hoc Working Group
May 12-13, 1998
Mountain View, CA

1. Opening remarks and introductions

The Chairman, Don Tolmie of Los Alamos National Laboratory, was late arriving due to weather problems so Roger Ronald opened this meeting shortly after 1 PM. Greg Chesson and Silicon Graphics, Inc. were thanked for hosting this meeting. This group is constituted as both the HIPPI Working Group under T11.1, and the HIPPI Networking Forum (HNF) - Technical Committee (TC).

Don lead a round of introductions when he arrived. The list of attendees is at the end of these minutes.

2. Review / modify the draft agenda

Draft agendas were distributed via e-mail before the meeting and hard copies were distributed at the meeting. At the meeting, item "8.7 HIPPI-LE Changes" was added. These minutes reflect the approved agenda.

3. Review minutes of previous meeting

The minutes of the April 21-22, 1998, working meeting in Palm Springs, CA, were reviewed. Jeff Young moved, and Bob Newhall seconded, to approve the April 21-22, 1998 working meeting minutes as written. Motion passed unanimously.

4. Review old action items

1. Von Welch to contact HIPPI-6400 MIB users and developers for comments on the current draft, and to prepare a presentation on the MIB for a future meeting. (Carryover)
2. Von Welch to look at developing a HIPPI-6400 host system MIB (for a NIC), to be done now as an annex of the present MIB with the possibility of splitting it out as a separate document at a later date. (Carryover)

3. Everyone to review the HIPPI-6400 MIB. (Carryover)
4. Jean-Michel Pittet to update "ARP and IP Broadcast over HIPPI-800" Rev 00 with the changes agreed to at the April meeting. (Carryover)
5. Jean-Michel Pittet to generate an "ARP and IP over HIPPI-6400" document. (Carryover)
6. John Gibbon to talk to Marck Doppke about processing the HIPPI-800 switch MIB through the IETF. (Carryover)
7. Greg Chesson to draft an IEEE tutorial on HIPPI-6400 ULA usage and the ULAs special to HIPPI-6400. (Carryover)
8. Greg Chesson and Jeffrey Chung to consider developing "reason codes" to explain why a particular ST Operation was rejected. (Carryover)
9. Greg Chesson to send e-mail detailing reasons for not doing a queue for client/server applications, and suggesting how they could be done in ST. (Carryover)
10. Jim Pinkerton to do a rewrite of ST original Annex C (now annex D). (Carryover)
11. Bob Willard to write up something on big/little endian issues for inclusion in the document. (Carryover)
12. Greg Chesson to collect text for a "folklore" annex in the document. (In process)
13. Greg Chesson to draft text describing how you differentiate duplicate operations from legal operations. (Carryover)
14. Jim Pinkerton to draft a timestamp option for the optional payload for inclusion in the next ST revision. (Carryover)
15. Jim Pinkerton to draft text for a virtual address in an optional payload associated with a Memory_Region_Available Operation. (Done)
16. Bob Willard to draft text for ST 6.1.4.4 on FetchOp collision and lockout cases. (Carryover)
17. Don Tolmie to draft text describing that all sequences may not be implemented. (Done)

18. Ian Philp to update D.4 and Figure D.3 as agreed to in Palm Springs. (Done)
19. Don Tolmie to update ST Rev 1.7 with the changes agreed to at the April meeting. (Done)

20. Michael McGowen to collect, tabulate, and document everyone's requirements for HIPPI-800 and HIPPI-6400 translation environments. (Carryover)
21. Greg Chesson to talk to Bob Willard and Barney Maccabe about hosting the July meeting. (Done)

5. HIPPI-6400-PH (ref: Rev 2.2a, March 31, 1998)

5.1 SuMAC and cable test results

Bob Newhall reported that cable skew has been measured at about 2 ns on two 40 meter cables. They had troubles with many CRC errors when using the 40 meter cables, with essentially no data being successfully transferred. Some of the SGI problems were attributed to less than perfect PC board layout, and they were in the process of creating a new card. The next rev on the SuMAC will be called Rev 1.1, and should be out in a few weeks. Bob did not think that Rev 1.1 would help this CRC error problem. Bob also said that they had been having some problems with EMI leakage from the connector backshell, and are working with Berg to resolve it.

Roger Ronald said that Raytheon saw about 150 errors/hour with a 40 meter cable when running at half speed (they are currently not able to run at full speed).

Herb Van Deusen was concerned about the cable quality and whether it met the specifications. Herb is working with Joel Darnauer of SGI to check out the SGI cable on the Gore test jig.

5.2 Jitter considerations

At the April, 1998, HIPPI-6400 Optical meeting in Palm Springs, the jitter associated with short-wavelength optics was identified as a problem. A concerted effort is going to be made to resolve these jitter questions. At the April meeting Roger Ronald also questioned whether we had similar jitter problems with the HIPPI-6400 copper interface. Nothing has been done to date to this issue. Roger Ronald took an action item to try to see if the jitter

problems identified by Steve Joiner of HP affected copper implementations in a similar fashion.

5.3 Comment on data rate vs memory storage confusion for "mega"

Mike Andrewartha of Hewlett Packard had complained over e-mail about our use of the word "mega" in the document. It is defined in 2.2 as 2^{20} , but used in many places as 10^6 when referring to data rates. Unfortunately transferring a mega byte over a mega byte/s interface takes longer than 1 second. Don noted that this usage is common in the industry. While it would be nice to fix up the document so that it is correct, it was not worth the delays associated with a public review comment just for this comment. If other substantive comments are received, then this item should be fixed too.

Don reported that Gene Dornhoff of Los Alamos identified some places in the copper portion of the document referring to rise times that don't add up. It was also felt that this was a nit that we could live with, but should also fix if other changes are needed. Herb Van Deusen said that we could probably delete the T_R and T_F parameters in Table 14 and use the eye mask diagram instead (this is essentially the procedure that Gore is using).

5.4 First public review status

The first public review closes June 9, 1998. Lacking comments during this public review period, the documents will continue being processed as American National Standards (i.e., this is the last chance to make comments or changes before the documents become approved standards). Please only make comments if you feel something is broken or unworkable; frivolous comments just slow down the process.

Submit all Public Review Comments to: NCITS Secretariat, Attn: Deborah J. Donovan, 1250 Eye Street, NW, Suite 200, Washington, DC 20005, E-mail: ddonovan@itic.nw.dc.us. Send copies to: ANSI, Attn: BSR Center, 11 West 42nd St., New York, NY 10036 (wluk@ansi.org). Also please send an e-mail copy of the comment to Don Tolmie, T11.1 Chairman, at det@lanl.gov. Reference NCITS 323:199x to comment on HIPPI-6400-PH.

There were concerns expressed that letting the document go for final processing when we were still unsure of the achievable cable distance may give us

trouble. On the other side, delaying the standard may hurt some companies. Roger Ronald suggested submitting a comment of the nature "we haven't been able to test at 40 meters yet". If the testing shows that everything is OK, then T11.1 can reject the comment and not make any changes to the document. Without changes we should probably be able to avoid a second public review. If changes are required, e.g., a shorter distance copper cable, then we can also add in the other changes at the same time; changes will probably require a second public review.

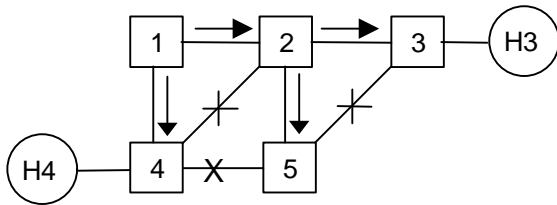
Roger took an action item to generate a public review comment against HIPPI-6400-PH, essentially pausing the document processing.

6. HIPPI-6400-SC (reference Rev 1.9, January 5, 1998)

6.1 Auto configuration of systems containing multiple switches

The discussion on how to do auto-configuration of multiple switches at April meeting in Palm Springs was long and somewhat heated. The final action item was for Essential Communications to defend their assertion that the current HIPPI-6400-SC document was OK and we should layer other protocols (e.g., RIP, OSPF, etc.) on top to do the configuration and routing.

The figure used in the discussion was:



The squares are HIPPI-6400 switches, the circles are hosts, and the arrows mark the 802.1d spanning tree that results from using the switch numbers. The links marked with "X", while functional in a physical sense, are pruned in the spanning tree algorithm and not usable. Hence, the only path from H3 to H4 is 3-2-1-4. The path 3-5-4 is not usable, even though it is shorter.

The questions that Essential agreed to address at the May meeting were:

1. Find a path from H3 to H4 without it being a static table, e.g., allow switches to be added/removed and the routing tables to be updated without manual intervention.
2. Allow optimal paths, e.g., 3-5-4.
3. Automatically find an optimal path for all traffic.

It was stated that what we needed were methods to:

- Learn the topology, avoiding loops
- Provide a method to use any alternate routes.

HIPPI-6400-SC doesn't presently provide a method to learning the topology. Jim Pinkerton felt that Michael McGowen was proposing something for topology discovery. Roger Ronald disagreed, saying that Michael was mainly interested in having the -SC document only specify the basic switch functions (e.g., micropacket interleaving) and using IEEE standards for the routing stuff. John Gibbons said that with ODS acquiring Essential Communications, it means that there is more commercial interest in HIPPI-6400 and hence compatibility with Ethernet will get more attention.

After some more discussion it was decided that with the a public review comment required for other reasons, we should wait for Michael McGowen's presence before continuing this discussion. Don was interested in if we use IEEE standards, then where would the process be documented and who would do it.

6.2 Other proposed changes

Roger Ronald asserted that the current mechanisms in HIPPI-6400-SC to prevent broadcast loops are inadequate. He stated that with an onboard broadcast capability, the requirement for switch hardware to know the inbound port for a Message is needed, but unstated. We might let this go as somewhat obvious (even though we did not think of it for a while). However, for a broadcast server this plain does not work. The same information on inbound port number is needed and there is no defined way for the information to cross from the switch to the broadcast server.

Jeff Young identified some other areas in the document that he felt needed work. For example he felt that the definitions in 3.1.11, 3.1.20, and 3.1.9 were somewhat circular. There was no resolution.

Jeff also identified some other areas that he felt were less than clear. There will be some document changes as a result of Jeff's comments.

6.3 Generate a public review comment ?

Like HIPPI-6400-PH, the HIPPI-6400-SC document is in public review, closing on June 9, 1998. Public review comments should be submitted the same as noted in item 5.3. Reference NCITS 324:199x to comment on HIPPI-6400-SC.

Roger took an action item to generate an public review comment against HIPPI-6400-SC, essentially pulling the document back into T11.1.

7. Scheduled Transfer (reference Rev 1.8)

Executive summary of ST work at this meeting:

- the document changes were accepted, some with additional editing changes;
- listing implementation subsets replaces multiple "optional" designations;
- requests for some non-supported sequences will result in logged errors;
- the text for STUs will be expanded to suggest single-STU Blocks for Put operations that cannot support out-of-order STUs;
- the text for F_Offset will be clarified in the next rev;
- we will try to give the annex for ST over Fibre Channel to T11.4. In the meantime we will update it as needed;
- a new optional payload was added to carry a virtual address in Memory_Region_Available operations;
- Annex D.4 on using Mx to look up Bufx values was accepted, with additional edits.

7.1 Review general document changes

The addition in clause 4 of stating where the Data Channel assignment bits were specified, and that the Data Channel and Control Channel could be the same or different physical channels, was accepted. The additional subclause headings in clause 4 were also accepted.

In 6.2.6, specifying that data Sources are not required to check for consistent Blocksize values

within a Transfer was accepted as written. The changes in 6.2.8 concerning the First Offset (F_Offset) to note that it is to help the data Source, not the data Destination, was accepted in principal, but with help from Barney Maccabe a number of editorial changes were made.

Adding in 10.4 what a keep-alive sequence consisted of was accepted as written.

In 10.10.6 we added that if Blocksize was inconsistent within a Transfer, then an error MAY be logged. It was felt that a new error flag just for this condition was unnecessary and we should use the "Illegal_Blocksize_Error" as presently stated. An error was discovered in the first sentence regarding Blocksize > 48, and this will be fixed in the next revision. Also, the conditions that can set the error will be listed as bullets.

In D.1 the last bullet was changed from "...fewer bits are involved" to "...multiplication and division can be implemented as simple shifts". The additions of letters to correlate figure 1 actions with the text were accepted. The editorial changes to D.3 were accepted.

The changes concerning the "M" and "N" timeout parameters in E.1.2 were accepted as written. The change to table E.9, state [r50,l] from "(++T_{ci}<M)?" to "(++T_{ci}<M_{ci})?" was accepted. The first of the two notes with ++T<M will be deleted, and the second changed to ++T<M_{ci}.

7.2 Subset rather than "optional" (pages 8, xii, 16, 18, 19, 22, 23, 27)

In Rev 1.7, Don had stated that many of the operations were optional, e.g., Persistent Memory and FetchOp. After discussion in Palm Springs, it was noted that almost all of the operations were optional. Rather than clutter the document up with the word "optional", it was agreed that we should try to collect all of the optional things into one place in the document. Don took a whack at this for Rev 1.8. The main text was in 4.8 where the different items were listed under "Implementating subsets of ST capabilities". A few editorial changes were made. It was agreed to list the required operations that an implementation must support, i.e., Virtual Connection setup and teardown, and Request_State and Request_State_Response. An "Unsupported_Sequence_Requested" error will be logged to signify that a request occurred for a

service that had been listed as unsupported during the Virtual Connection setup.

The second paragraph of 6.1.4.4 was removed as being redundant with the new text in 4.8. The text changes in the Introduction, under "Request_Answer" for Write, Read, Get and FetchOp sequences were accepted with a change of "...rejected or..." to "...rejected, i.e., ...".

Removing the word "optional" from "6.1.4 Persistent memory sequences", "6.1.4.4 FetchOp sequences", and "6.2.12 Persistent memory", was accepted.

The subject of "reason codes" to say why a particular operation failed was raised. It was suggested that they could be carried in an optional payload. The possibility of carrying "capability information" in the optional payloads of the Virtual Connection setup operations was considered and rejected as being not as extensible as reject "reason codes". Craig Warner wanted work to start soon on developing reason codes. People wanted the reason codes to be documented in a "living document" that could be easily updated, e.g., an HNF document. Greg Chesson stated later that he preferred the reason codes to be alpha strings rather than specific bit assignments. Greg still has an action item to bring in a proposal for reason codes.

7.3 Decreasing persistent memory region size (pages 20, 21, 25, 36)

At the Palm Springs meeting it was agreed that a Responder could decrease the size of a persistent memory region by specifying the final size in the Memory_Region_Available operation. The resulting text in "6.1.4.1 Allocate a persistent memory region", and in "6.2.3 Transfer length (T_len)", was reviewed and accepted. It was noted that "T_len" in 6.1.4.1 had an incorrect page reference.

In table 7, under the Memory_Region_Available operation, combining the Sync and B_num fields to carry the T_len parameter was reviewed and accepted.

Below table 7, Don questioned whether the alphabetical ordering of the notes as OK, or whether it would be better to combine the items with the lead dash with the other items. After some discussion it was decided that it was OK as is.

7.4 Optional payload carrying a ULP parameter (page 54)

At the Palm Springs meeting it was agreed to add an optional payload coding to carry a ULP parameter. Don added the entry in table B.1 and the text in B.2.3. Don said that he had considered splitting the parameter in half, with the first two bytes being a ULP flag to identify the remaining bits, i.e., with the intent to place the major portion of the parameter on a 32-bit boundary. He had rejected this as being too specific and maybe not fruitful. The text was reviewed and edited to show the maximum option size of 30 bytes instead of 29 bytes (i.e., the End of List is not required).

7.5 Optional payload carrying a virtual address

At the April meeting Jim Pinkerton had suggested, and the group accepted, that an optional payload could be used with a Memory_Region_Available operation to pass a virtual memory address to the other end. Jim had not drafted his text in time to have it included in Rev 1.8, but did create text that was reviewed at this meeting.

Roger Ronald suggested that Opcode = 02 (for passing a general ULP parameter) be used instead of dedicating a specific Opcode for this function. Greg Chesson pointed out that it would be better to have a specific Opcode for compatibility across multiple ULPs. It was agreed to use Opcode = 3 for the virtual memory address optional payload, separate from the ULP parameter optional payload.

7.6 Using the Mx parameter (pages 25, 61-62)

Previous text describing use of the Mx parameter for indexing into a hash table had been partially accepted, but lots of re-write had been suggested. Don and Ian Philp of Los Alamos had rewritten D.4 to help clarify the issue of looking up Bufx values. The new example was much more detailed, and was favorably received. Craig Warner proposed adding STU_num to the table entry, and changing the table name from "Mx Table" to "Validation Table"; both were accepted.

During the read-through, other operations that could enable Data operations were added but later deleted. A paragraph will be added immediately preceding the example list noting that persistent memory region sequences would be similar but with some different operation and parameter names.

7.7 Duplicated operations (page 38)

Greg Chesson has an action item to generate something for duplicated operations, but nothing has been completed to date. It was noted that the state tables are a great aid in determining the actions to take for a duplicated operation.

7.8 Remove Annex A.5, Fibre Channel as the LLP (page 52-53) ?

The Fibre Channel group has taken a turn, starting to specify IP and ARP over Fibre Channel in an RFC instead of in FC-LE. Don noted that our mapping in the present clause A.5 was based in FC-LE. At the April meetings when discussions about ST, Fibre Channel, and VIA were held in the Fibre Channel meeting, some dissension was voiced from the Fibre Channel folks. In talks with Roger Cummings, T11 Chairman, he suggested that we remove the ST over Fibre Channel annex from ST and give the project to T11.4 for them to complete as they see fit. Don felt that advantages of this scenario included:

- It will be more visible to the FC community with the FC-ST name on it.
- The FC group can create their own mapping, and maybe embrace ST more because they "own" the mapping.
- The FC group has no interest in bridging or routing to other interfaces (e.g., Ethernet or HIPPI) so they do not need (or want) the MAC, LLC, and SNAP headers. Don personally felt that this is very short-sighted, but maybe they have good reasons.
- If T11.4 strikes out on a direct VI mapping over FC-PH, then they can fall back on the FC-ST document as the missing link.

If we decide to give it to T11.4, then Don can draft an SD-3 Project Proposal for the work, but a Technical Editor needs to be identified as Don did not feel that he had the time to do it.

Another option is for us to update the Fibre Channel as the LLP annex A.5 with references to the RFC, making some of the headers optional, and maybe some other changes.

The decision was to leave the text in the document for now, update it when we can, and encourage T11.4 to take it over.

7.9 Out of order STUs in Put operations (page 21, 41)

Craig Warner questioned how the Responder knows when a Put operation is complete when the STUs can arrive out of order. The final STU has the Last bit set, but you must make sure that all lower numbered STUs of the Put have been received before notifying the ULP that the operation has completed. The one sure-fire method is to only use single-STU Blocks if the receiving end cannot handle out of order STUs and there is a chance of the STUs arriving out of order. It was noted that we have text describing this situation in Annex A (e.g., last paragraph of A.3), and it was agreed that we should provide similar text in the body of the document. A parenthetical expression was also added to 6.1.4.2 to note that the B_num parameter was in essence a Put sequence number.

7.10 Other proposed changes

Don suggested adding text to 6.2.9 recommending that Data operations with Send_State = 0 also use Sync = 0. This was accepted as long as it was just a "recommendation" and not a requirement.

7.11 Re-review Introduction, clauses 1 and 4 (pages xii, 5-8)

The text and figures in these sections is fairly old, and Don worried that it was not as up to date as it should be. These sections were reviewed and a few changes made. It turned out that things were really in fairly good shape, but a few good corrections were made.

7.12 Documenting an ST API

Don asked if there was interest in documenting how ST would be used to carry a VIA ULP. He felt that since VIA did not specify a packet format or parameter sizes that independent implementations would not interoperate.

Interest in this work was expressed, but people felt that it should be more general. Greg Chesson and Jim Pinkerton felt that we should specify an API for ST that could be used to carry VIA, MPI, and other Shared-Memory protocols. They had a very preliminary draft of something, but did not distribute it.

The rationale for this work, as stated by Greg Chesson, is that while hardware interfaces may be superseded with newer faster ones, APIs last forever. Hence the goals for an API document would be to promote interoperability with multiple ULPs, be device independent, and allow software reuse when the hardware changes.

While T11's charter is "Device Level Interfaces" it was still felt that this was an appropriate place for the work since T11 had also developed ST. The way to resolve it is to develop a Project Proposal and forward it for processing. The group that has the final say is OMC (Operations Management Committee), and if some other group is more appropriate than T11 then they can tell us. The only comparable work in the topic area that was identified was POSIX.

Don took an action item to draft a Project Proposal (with Greg Chesson contributing the Needs and Scope sections) for an ST API standard. No Technical Editor was identified at this meeting, and Greg Chesson will pursue identifying one or more Technical Editors for the document. It was agreed that this work took precedence over the Project Proposal for ST over Fibre Channel.

8. Other HIPPI items

8.1 ARP and IP Broadcast over HIPPI-800

8.1.1 IETF processing status

Jean-Michel Pittet had distributed a draft charter over e-mail for an IETF Working Group to address (1) ARP and IP Broadcast over HIPPI-800, (2) IP and ARP over HIPPI-6400, and (3) HIPPI endpoint and switch MIBs. One comment had been received from Jim Pinkerton. Jean-Michel will be forwarding the proposal to IETF for action.

8.1.2 Document review

At the April meeting, Jean-Michel led a document review through section 5.2. A considerable number of changes were made in April. Since an update to the document had not been made, this meeting continued the review starting at 5.3. It was noted that we wanted the HIPPI-6400 ARP functions to look as much as possible like Ethernet ARP functions. Now that we are pulling HIPPI-6400-SC

back from public review to readdress the broadcast issues, things are open for discussion, e.g., do we still need a HIPPI ARP server if there is the possibility that HIPPI-6400-SC switches will provide broadcast capability.

A complete read-through from 5.3 was completed with a considerable number of changes noted. An additional IANA hardware type for HIPPI-800 will be requested. Another read-through of the document after it is updated may be warranted. Jean-Michel should have an updated document before the next meeting.

It was noted that the ARP functions in Jean-Michel's document are different from the ones currently in the HIPPI-LE standard. If no one is using the HIPPI-LE ARP functions, and we didn't think there was, then it would be good to remove the ARP functions from HIPPI-LE to avoid possible confusion.

8.2 HIPPI end-point MIB

Don has a copy of the 1995 document which he put on his web page. It is an Internet Draft by John Renwick that expired in March 1996, and has been removed from the IETF Internet Draft repositories. If we want to pursue this MIB further then we need a champion for it.

8.3 HIPPI switch MIB

Marck Doppke of Essential Communications has a draft document out for comment. John Gibbon said that this HIPPI switch MIB should be a product soon.

8.4 HIPPI-6400 MIB

Von Welch of NCSA has a draft document, based on HIPPI-6400-PH Rev 1.4, out for comment. Von was not at this meeting and nothing new was reported.

8.5 HIPPI-6400 ARP and IP RFC

Jean-Michel Pittet said that the HIPPI-6400 ARP and IP RFC would essentially be a cut-and-paste of the ARP over HIPPI-800 document. He is concentrating on the -800 document now since it is the harder one; the -6400 version should be a subset.

8.6 Tutorial for HIPPI-6400 ULA use

Greg Chesson has obtained the format material from Bob Snively of Sun. Drafting of the actual text is pending.

8.7 HIPPI-LE changes

HIPPI-LE became an approved ANSI standard in 1993. With a 5-year sunset on standards, T11.1 needs to either (1) reaffirm the standard without changes, or (2) revise the standard, or (3) withdraw the standard. With the interest in removing the ARP functions from HIPPI-LE (see 8.1 above) Don took an action item to draft a project proposal for a revision to HIPPI-LE. Other changes will also be considered, so everyone should submit their comments and proposals as soon as possible.

9. Future meeting schedule

9.1 Plenary week, June 9-10, St. Petersburg Beach, FL

HIPPI meeting during the June Plenary week will be on Tuesday and Wednesday, the 9th and 10th. The location is the Trade Winds Hotel, 5500 Gulf Boulevard, St. Petersburg Beach, FL 33706, phone 813-367-6461, Fax 813-562-1214. Chuck Brill and AMP are the host. The group name for reservations is "Accredited Standards Committee ASC-T11/AMP", and the group room rate is \$119-149 per night plus tax. The reservation cutoff date is May 11, 1998. (See the meeting announcement on the web page at <http://www.cic-5.lanl.gov/~det/> for further details.)

Tuesday 9 AM - 6 PM : HIPPI ad hoc
Tuesday 6 PM - 9 PM : HIPPI-6400-OPT
Wednesday 9 PM - 6 PM : HIPPI ad hoc
Wednesday 6 PM - 8 PM : T11.1 Plenary

9.2 Interim meeting, July 20-21, Albuquerque, NM

The July working meeting had previously been tentatively scheduled for July 14-15 in the Boston area with Bob Willard and DEC as the host. The July meeting has now been rescheduled for Monday and Tuesday, July 20-21, in Albuquerque, NM, with Barney Maccabe and the University of New Mexico hosting. (See the meeting announcement on the web page at <http://www.cic-5.lanl.gov/~det/> for further details.)

Monday - July 20 : 1 PM - 9 PM
Tuesday - July 21 : 8 AM - 9 PM

9.3 Plenary week, August 11-12, Portsmouth, UK

The August Plenary week meetings will be held at the Forte Posthouse, Pembroke Road, Portsmouth, Hampshire, UK P01 2TA, phone 01705 827651, Fax 01705 756715. Paul Levin and Xyratex are the hosts. The group name for reservations is "American National Standards Institute", and the group room rate is 95£ (Sterling) single or double occupancy. The reservation cutoff date is June 30. (See the meeting announcement on the web page at <http://www.cic-5.lanl.gov/~det/> for further details.)

Tuesday 9 AM - 6 PM : HIPPI ad hoc
Tuesday 6 PM - 9 PM : HIPPI-6400-OPT
Wednesday 9 PM - 6 PM : HIPPI ad hoc
Wednesday 6 PM - 8 PM : T11.1 Plenary

It was noted that due to hardware delivery, and other circumstances, that the attendance at the Portsmouth meeting may well be minimal. It was agreed that we would consider the possibility of canceling the August meeting since it was unlikely we would obtain a critical mass. A final decision will be made at the June T11.1 Plenary meeting.

9.4 Future meeting dates and locations

Note that an interim working meeting has tentatively been scheduled on September 1-2, in Richardson, TX, with Hewlett-Packard as the host.

The T11.1 (i.e., HIPPI) Plenary meetings will be on Wednesday evening of the T11 Plenary week, following the HIPPI working meetings.

The 1998 schedule is firm. Note that T11 schedules the plenary meetings. Hopefully HIPPI-6400 will be far enough along that we will not continue to need interim working meetings after May. A tentative interim meeting was scheduled for September 1-2, in Richardson, TX (Dallas area) with Hewlett-Packard as the host. Recent additions and changes are underlined and bold.

1998 –

Jun 9-10	Plenary	St. Petersburg Beach, FL	AMP
Jul 20-21	Interim	Albuquerque	UNM
Aug 11-12	Plenary	Portsmouth, UK	Xyratex
Sep 1-2 ?	Interim ?	Richardson, TX	HP
Oct 6-7	Plenary	Ft. Lauderdale, FL	Adaptec
Dec 14-18	Plenary	Tucson	FSI

The 1999 and 2000 schedules just include the Plenary weeks; no interim working meetings are scheduled yet. Meeting locations and hosts marked with (?) are tentative at this time. The meetings in bold underline without a (?) have been firmed up. Note that the HIPPI and T11.1 meeting days are not specified; they will be somewhere within the Plenary week.

1999 –

Feb 8-12	Plenary	Huntington Beach, CA	Qlogic
Apr 5-9	Plenary	Palm Springs, CA	Brocade
Jun 7-11	Plenary	Minneapolis, MN	Ancor
Aug 2-6	Plenary	Minneapolis, MN	ENDL
Oct 4-8	Plenary	Ft. Lauderdale, FL	Adaptec
Dec 6-10	Plenary	Reno, NV	Solution

2000 (dates approved, locations and hosts are open)

Feb 7-11	Plenary	San Diego, CA (?)	QLogic
Apr 3-7	Plenary	Palm Springs, CA (?)	Brocade
Jun 5-9	Plenary	(?)	(?)
Aug 7-11	Plenary	Hawaii (?)	Solution (?)
Oct 2-6	Plenary	San Diego, CA (?)	QLogic
Dec 4-8	Plenary	(?)	(?)

12. Review action items

(The action items are grouped by project or category to hopefully make them easier to find.)

1. Von Welch to contact HIPPI-6400 MIB users and developers for comments on the current draft, and to prepare a presentation on the MIB for a future meeting.
2. Von Welch to look at developing a HIPPI-6400 host system MIB (for a NIC), to be done now as an annex of the present MIB with the possibility of splitting it out as a separate document at a later date.
3. Everyone to review the HIPPI-6400 MIB.

4. Jean-Michel Pittet to update "ARP and IP Broadcast over HIPPI-800" Rev 00 with the changes agreed to at the April and May meetings.
 5. Jean-Michel Pittet to request another HIPPI-800 Hardware Type from IANA.
 6. Jean-Michel Pittet to forward the request for an IETF Working Group to the IETF.
 7. Jean-Michel Pittet to generate an "ARP and IP over HIPPI-6400" document.
 8. Don Tolmie to issue an e-mail notice that the ARP portion of the HIPPI-LE standard (ANSI X3.218-1993) will be deleted unless someone replies that it is used in an implementation.
 9. Don Tolmie to draft a Project Proposal for a revision of ANSI X3.218 (HIPPI-LE).
 10. John Gibbon to talk to Marck Doppke about processing the HIPPI-800 switch MIB through the IETF.
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11. Greg Chesson to draft an IEEE tutorial on HIPPI-6400 ULA usage and the ULAs special to HIPPI-6400.
 12. Roger Ronald and Greg Chesson to investigate whether the jitter problems identified with HIPPI-6400-OPT short-wavelength optics also apply to HIPPI-6400 copper.
 13. Roger Ronald to submit a public review comment from T11.1 against HIPPI-6400-PH.
 14. Roger Ronald to submit a public review comment from T11.1 against HIPPI-6400-SC.
 15. Michael McGowen to detail methods for topology discovery and alternate path usage in environments containing multiple HIPPI-6400-SC switches.
 16. Vasu Kengeri to detail bridge behavior with the HIPPI-800 ARP.
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17. Greg Chesson and Jeffrey Chung to consider developing "reason codes" to explain why a particular ST Operation was rejected.
 18. Greg Chesson to send e-mail detailing reasons for not doing a queue for client/server applications, and suggesting how they could be done in ST.
 19. Jim Pinkerton to do a rewrite of ST original Annex C (now annex D).

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20. Bob Willard to write up something on big/little endian issues for inclusion in the document. Craig Warner to check on the status of this effort.
21. Greg Chesson to collect text for a "folklore" annex in the document.
22. Greg Chesson to draft text describing how you differentiate duplicate operations from legal operations.
23. Jim Pinkerton to draft a timestamp option for the optional payload for inclusion in the next ST revision.
24. Bob Willard to draft text for ST 6.1.4.4 on FetchOp collision and lockout cases. Craig Warner to check on the status of this effort.
25. Craig Warner to provide FSM's for the operations associated with persistent memory.
26. Don Tolmie to update the ST over Fibre Channel annex in ST Rev 1.8.
27. Don Tolmie to update ST Rev 1.8 with the changes agreed to at the May meeting.
28. Michael McGowen to collect, tabulate, and document everyone's requirements for HIPPI-800 and HIPPI-6400 translation environments.
29. Greg Chesson to draft the Need and Scope clauses for the API for ST Project Proposal.
30. Don Tolmie to complete the draft of a Project Proposal for an API for ST.
31. Greg Chesson to identify a Technical Editor(s) for the proposed API for ST standard.
32. Barney Maccabe to provide meeting information for the July 20-21, 1998 meeting in Albuquerque.

13. Adjournment

The meeting adjourned at 7:00 PM on May 13.

Attendance

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