

IEEE P1394.1 Working Group
AGENDA
Monday, January 26th, 1998
San Jose, California

1. Administrative
 - a) Minutes of 11/13/97 - 11/14/97 meeting
 - b) PAR revision status
 - c) IEEE International Participation Fee
 - d) New reflector
2. Technical topics
 - a) Reservation of bridge resources - Shima/Toguchi
 - b) Cycle reconfiguration for a bridge - Shima/Toguchi
 - c) Solution to cycle master location - Sato
 - d) Competition for STREAM_CONTROL registers - Shima/Toguchi
 - e) Discussion of command-based bridge control
3. Assignment of action items
4. Future meeting dates (all co-located with P1394b)

3/19-20	Thu-Fri	Phoenix
4/29-30	Wed-Thu	Newport Beach
6/11-12 ?	Thu-Fri	St. Petersburg
7/15-16	Wed-Thu	Bath, UK
8/20-21	Thu-Fri	Tahoe?
9/16-17 ?	Wed-Thu	St. Petersburg ??
10/22-23	Thu-Fri	Maui

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Sign-in sheets facilitate voting requirement validation (must attend two out of the last three meetings to qualify for voting privileges).

Handouts available at meeting: Current draft of standard, Agenda, minutes from last meeting, PAR extension letter, administrative information sheet.

Call for agenda additions: None from group

Call for approval of last meetings' minutes: Peter Johansson moved to accept. Second by Richard Churchill. Passed unanimously.

A new IEEE reflector will soon be available. Dick Scheel will post a message to the current reflector to notify all of the change. Peter Johansson suggested Dick Scheel inquire of the IEEE folk whether postings to the reflector be limited to only those who are listed as members (this will facilitate the elimination of SPAM).

Project Authorization Request (PAR) status: (Parent committee is Microprocessor Standards Committee - MSC) has approved an extension of the charter. Peter Johanson asked Dick Scheel to inquire the charter and province of IEC TC100 and JTC1 SC26 (Gene Milligan may be a resource Dick Scheel might want to use to initiate the inquiry).

International Participation Fee: IEEE, because it forwards standards to ANSI and other international standards committees, has asked participants to pay a

fee to assist in funding this effort. The requested amount is \$300.00 annual. It has been asked that working groups collect \$20.00 from each of their participants at each meeting. The endorsement of this group has been that each participant shall be responsible for paying their fee directly to IEEE (the group is not interested to set up a checking account or any other such monetary tracking and accounting process). Dick Scheel will gather additional information and bring the information to the meeting. Until then, "standby."

2. Technical Topics

a. Reservation of Bridge Resources - Shima/Togouchi (for STREAM_CONTROL registers and bridges band resource)

Hardcopies of the presentation were made available. A request for a soft-copy of the presentation on floppy disk was made. The soft copy will be made available for download from the ftp repository
(ftp.symbios.com:/pub/standards/io/1394/p1394.1)

A general discussion of bandwidth limited bridges among the individuals present. Peter offered a change to Togouchi-san's presentation:

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FABRIC SPEED
  Unlimited Bridge
    STREAM_AVAILABLE
  Limited Bridge
    FABRIC_BANDWIDTH_AVAILABLE
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The goal is to facilitate a simple management mechanism to determine the amount of bandwidth available through a bridge. A solution needs to be incorporated which prevents a situation from occurring in which a specific bandwidth is desired and it "appears" the bridge can support the needed bandwidth, but, in actual fact, due to bandwidth overhead requirements, the actual needed bandwidth is not available. Bandwidth is consumed by: payload, overhead, and speed.

A discussion of one register accessible through both portals versus a register available at each portal versus a single register available on one portal but not accessible through the other portal.

b. Cycle Reconfiguration for a Bridge - Shima/Togouchi

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A bridge must have at least one portal configured as a root (cycle master) and may have both portals configured as root. The bridge manager is responsible to make certain a bridge's portals are configured properly to facilitate the retransmission of cycle clock (so isochronous time stamps will be valid on all busses in the network - the cycle clock needs to be the same on all busses).

In the instance where a cycle master exists on the local bus (versus a bridge portal) on both sides of the bridge, a cycle reconfiguration must take place so that at least on bridge portal becomes the cycle master. The bridge master must configure route (rte) appropriately to facilitate proper operation.

The proposal suggested the group select one of three mechanisms for the generation of a PHY configuration packet with the force_root flag:

Plan A: "bridge manager" check and requests, "portal" generates
Plan B: "portal" checks and generates
Plan C: "bridge manager" or "portal" checks and requests,
"bus manager" of the bus generates.

Most discussion favored plan B.

c. Solution to Cycle Master Location - Sato

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It is most difficult to maintain synchronization of the Cycle_Offset through bridged busses. The proposal suggested the addition of two new registers: A timer Offset and a Timer Adjustment registers. At the receipt of a cycle reset pulse, the cycle offset field of the cycle time register would be used as an offset value and stored into the timer offset register. The cycle slave node uses the value in the timer offset register and sends it to the timer adjustment register in the cycle master node. This results in a compensated cycle clock output from the cycle master node.

The bridge portal implements the time offset register while the 1394b node should implement the time adjustment register.

d. Competition for STREAM_CONTROL registers - Shima/Togouchi

This was combined with the "Reservations of Bridge Resources" presentation.

e. Discussion of command-based bridge control (led by Dick Scheel)

Dick Scheel presented a foil which presented a brief outline for a command based bridge (versus a CSR based bridge) in which three major commands were presented with the appropriate parameters associated with each (as presented below):

- net initialize
 - parameters: next_bus_id
 - response:
 - O.K./fail
 - next_bus_id
 - failure reasons
- Set up isoch stream (also tear down)
 - parameters
 - channel # in bound
 - bandwidth in bound
 - speed in bound
 - destination node_id [& EUI-64?]
 - ? "controller" node_id [& EUI-64?]
 - response:
 - O.K./fail
 - failure reason
- reset notification
 - parameters:
 - bus_id (Note: Merging two buses results in possibly two bus_ids, in possibly two domains, to report)
 - phy_ids changed true/false
 - topology (net) changed true/false

Peter suggested that a creating the editorial support for a command based bridge versus a CSR based bridge will result in the same "low-level" research and documentation as is currently being pursued in the CSR based bridge work. The point being: the work must be done in either case and the way things are "packaged" can be resolved at a later time. (Whether CSR based or Command based is a "packaging" issue.)

More discussion on this topic was encouraged to take place on the reflector.

Assignment of action items

none

Open Discussion

The meeting was adjourned, after which Dick Scheel presented a tutorial on what has been to date in P1394.1

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