

Minutes of IEEE P1394c Working Group Meeting (9/23/2003)

The IEEE P1394c Working Group was hosted by Broadcom in San Jose, CA on Tuesday, Sept. 23, 2003. The attendees were:

Colin Whitby-Strevens	Apple	colinws@apple.com
Les Baxter (CC)	Avaya	les@baxter-enterprises.com
Kevin Brown	Broadcom	kbrown@broadcom.com
Walter Hurwitz	Broadcom	whurwitz@broadcom.com
Richard Thousand (CC)	Broadcom	thousand@broadcom.com
Dwayne Escola	Panasonic	descola@psdc.com
Bob Davis	Summit Computer Systems Inc.	bob@scsi.com

Attendees with (CC) after their name attended via a conference bridge.

Colin Whitby-Strevens chaired the meeting due to the absence of Michael Johas Teener.

Agenda:

- 1) Welcome – Colin welcomed the group to the first meeting of the IEEE P1394c Working Group. The PAR to create this group was approved by the IEEE a couple of weeks ago.
- 2) Introductions
 - Working Group Secretary – Les Baxter was unanimously approved as the working group secretary, replacing Burke Henahan.
 - Chairman – Michael Johas Teener was unanimously reaffirmed as the chairman of the working group.
- 3) Approval of Agenda – approved as listed here.
- 4) Voting – everyone present is eligible to vote at this meeting since it is the first official meeting of the working group. Regular voting rules (must have attended 2 of the last 3 meetings to vote) will resume at the next meeting.
- 5) Call for Patents –
 - Colin stated that Apple reiterates their previous statement that they may have patents that they will license through the 1394 Patent Pool.
 - Kevin Brown stated that Broadcom will submit a letter regarding patents at the appropriate time.
 - Kevin also noted that the 1394 License Authority does not currently include 1394c.
 - Anyone who has filed patents that may be essential for implementing 1394c should bring that information to the attention of the working group.
 - Bob Davis pointed out that there is a set of official slides on the IEEE patent policy that should be used at each meeting.
- 6) Report from Sponsor – Bob Davis summarized the discussions that took place during the approval of the PAR. Bob had discussions with some members of the 802.3 community who had expressed reservations about the PAR. Colin expressed the thanks of the working group for his efforts.
- 7) Web Site and Reflector
 - Will continue to use the main IEEE 1394 reflector.
 - Would like to change the name of the web site from S800BASE-T to P1394c. Bob Davis noted the sensitivity to using “S800BASE-T”
- 8) Review of action items carried over from S800T study group – 4 items are still open, see details below. The remainder of the action items listed in the minutes of the July 8.2003 meeting have been closed.
- 9) Autonegotiation – There was a discussion about liaison and cooperation with the IEEE 802.3 committee which culminated in an action for Kevin Brown to write a liaison letter to Paul Nikolich.
- 10) Robust encoding proposal (see below)

- 11) GMII Interface (see below)
 - 12) Document status -- Colin summarized some of the changes in Clause 14 (Connection Management) to support T-mode operation. Bob Davis pointed out that 1394c is an amendment, not a revision. To avoid consternation at the IEEE, it should be formatted as editing instructions.
 - 13) Schedule – Need to specify dates for:
 - PAR approval – Sept. 2003
 - First draft (with placeholders) (October, 2003)
 - Ask MSC to create balloting body (Jan. 2004)
 - First ballot (March, 2004)
 - Notify MSC that standard will be ready for approval (Oct. 2004)
 - Ready for Standards Board approval, ballot resolution completed. (Dec. 2004)
- Note – dates in parentheses are tentative suggestions from this meeting.
- 14) Next Meeting – Monday, Oct. 20, 2003 at 10:30 AM in conjunction with the 1394 TA meeting at the Embassy Suites Hotel, 250 Gateway Blvd., South San Francisco, CA 94080.
 - 15) Any other business
 - Bob Davis is soliciting volunteers for the SC25/WG4 TAG which includes IEEE 1394 (and other MSC-based standards). Send email to bob@scsi.com if you are interested.

Robust Encoding Proposal

Colin distributed a document describing this proposal on Sept. 4. The main issue is that the 802.3ab encoding has errored bytes, not errored bits. Since the 1394 information is sent as 10-bit symbols, this means that a single error could corrupt two consecutive 1394 symbols. 1394 control codes marking the start and end of packet need to be protected against this. Colin and Jerry Hauck have devised a more robust encoding method to get around this problem.

Colin has coded up a simulation of this encoding (which those in San Jose were able to observe) with 5 nodes and random errors. With byte errors inserted at a 1% rate, there was 1 bus reset in 11ms of simulation time, but the system did not hang. More investigation is needed, but the results look promising so far.

The encoding proposal was accepted for inclusion in the 1394c draft. Colin will continue testing and refining it.

GMII Interface

Colin proposes ignoring the MDIO part of GMII and defining abstract service interfaces instead which developers can implement as they please. New services include:

- Link pulse on
- Link pulse off
- Autonegotiate
- Select T-port
- Disconnect
- T-port off (power off)

Status requests – new values have been added for:

- signal detect
- autonegotiation active
- autonegotiated to 1394
- autonegotiated to 802
- (autonegotiation failed – the absence of either negotiation to 1394 or to 802 when autonegotiation completes)
- T-port ok

Bob Davis suggested incorporating flexibility for supporting higher speeds in the future. This could be either 10GBASE-T or an intermediate rate.

Previous Action Items:

- 1) Michael Johas Teener – Draft 1394c specification.
- 2) Colin -- C-code for draft document. Colin has created a simulation model that is currently running 1394 regression tests.
- 3) All -- should power management features be mandatory or optional?
- 4) Colin -- Define register map encoding for PHY delay (there aren't enough bits in the current register.)

New Action Items:

- 5) Bob Davis – provide a URL for the set of slides describing the IEEE Patent Policy
- 6) Michael Johas Teener – change the name of the web site to P1394c (from S800BASE-T)
- 7) Kevin Brown – draft a letter to Paul Nikolich (chair of IEEE 802) requesting a technical liaison who can work with us on the technical details of autonegotiation, insuring interoperability (or at least coexistence) with current equipment, etc. – to be assisted by Michal Johas Teener, Colin Whitby-Strevens and Bob Davis, the final version of the letter to circulated to P1394c concurrently with being sent to Paul.
- 8) Colin – run the error simulation without the robust encoding and compare to the current results.

Prepared by:
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