DocNum: T10/01-223r0
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Title: Minutes of SBP-3 Working Group
ftp://ftp.t10.org/t10/document.01/01-223r0.pdf

Minutes of the SBP-3 Working Group meeting, July 17-18, 2001
Wyndham Hotel, Colorado Springs

Attendees:

Eric Anderson	Apple	ewa@apple.com
Dan Colegrove	IBM	dcolegro@us.ibm.com
Lee Farrell	Canon	lfarrell@cissc.canon.com
John Fuller	Sony	jfuller@computer.org
Andy Green	Oxford Semiconductor	andy.green@oxsemi.com
Peter Johansson	Congruent Software	PJohansson@ACM.org

The following agenda was presented by Johansson. In the minutes that follow, the start of discussion of items listed below is denoted by the index number listed within square brackets, such as [4.1]. Note that these references do not always appear in order, and may not signify the conclusion of discussion of a previous agenda item.

1. Introductions and procedures
   1.1 T10 Membership and voting
   1.2 Document naming conventions
   1.3 Two-week rule
   1.4 Meeting fees
   1.5 Approval of prior minutes
2. Call for patents
3. Informal liaison
   3.1 IEEE P1394.1 [Johansson]
   3.2 IEEE P1394.3 [Johansson]
4. Prior action items
   4.1 P1212 Revision entry in unit directory [Johansson]
   4.2 Configuration ROM (feature control, instance directories) [Johansson]
   4.3 Request AV/C expert to review Annex H [Fuller]
   4.4 Request AV/C expert to define track metadata [Fuller]
   4.5 Operational description of login (bus reset) [Johansson]
   4.6 SBP-3 Liaison report to 1394 TA AVWG [Anderson]

5. Review of changes in working draft
6. Old business
   6.1 RBC commands for extent management [Johansson]
7. New business
   7.1 Distributed data buffers for SBP-3 [Johansson]
   7.2 Isochronous Model [All]
8. Meeting schedule
9. Review of action items

Adjournment

[1] Johansson called the meeting to order and updated the agenda, as reflected above.

[1.3] Johansson briefly reviewed the two-week rule, explaining that it did not prevent the discussion of documents posted less than two weeks before a meeting.

[2] Johansson reviewed general T10 policies and procedures. In general, attendance and participation at T10 ad hoc meetings (such as this one) is open to both visitors and T10 members. When formal votes are taken, either in an ad hoc meeting or in the T10 plenary, one vote is permitted each organization, to be cast by its principal representative or designated alternative. A two-week rule is in effect: No matter may be voted on unless notice was given at least two weeks prior. Documents to be voted on must have been posted two weeks prior to the vote. The two-week rule can be waived if nobody objects. Announcements of new documents and meetings must be posted to the T10 email reflector; all other business can be conducted on the working group reflector.

The following paragraph about ANSI/T10 patent policy is copied from past T10 Plenary minutes:

A document is available from ANSI, "Procedures for the Development and Coordination of American National Standards", at no charge. This document is also on the web at http://www.ncits.org/help/ansi_sdo.html. Section 1.2.11 contains the ANSI patent policy. Amy Marasco manages patent issues for ANSI and can be contacted at amarasco@ansi.org or 212-642-4954. Gene Milligan prepared a useful “Handy dandy Technical Committee's Patents Guide“, which is available at ftp://ftp.t10.org/t10/document.99/99-291r0.pdf.

[1.5] The minutes from April 26-27 (Portland) and June 5-6 (Chicago) were approved:

ftp://ftp.t10.org/t10/document.01/01-139r0.pdf

ftp://ftp.t10.org/t10/document.01/01-187r0.pdf

[3.1] Johansson gave the P1394.1 liaison report. The P1394.1 ballot has closed. There were 52 people in the ballot group, of whom 32 voted yes, 8 voted no, and 2 specifically abstained, yielding a total of 42 responses received. The IEEE minimum response of 75% was met (80% responded). With 80% affirmative votes, the draft will go to the Ballot Review Committee (BRC).

[3.2] Johansson gave the 1394.3 liaison report. Alan Berkema, the Vice Chair, will be the BRC Chair, and hopes to convene the BRC in August. Johansson is still editing the document, and has prepared a comment registry including many remarks from Mr. Milligan. The extent of the work remaining to be done is unclear. Interested participants should contact Berkema (alan_berkema@hp.com).

[4.1] Johansson reported that the latest recirculated 1212 draft (version 2.0) includes the new revision entry key previously requested by the SBP-3 group. Johansson stated that approval of this draft appears to be likely, so the revision entry can soon be incorporated in the SBP-3 draft.

[4.2] Johansson noted that this item was completed, and would be reviewed in the interim draft later in the meeting.

[4.3] [4.4] Regarding Annex H, Fuller reported that he is learning about AV/C, but is not yet an expert as required by his action item. After discussion with Johansson, Fuller believes that Annex H may require some changes. Fuller noted that AVC commands can be up to 512 bytes, which might fit poorly in the ORB data structure, adding that Bidirectional ORBs could be used to point to a large command. Anderson remarked that many AVC commands are small, and suggested that small commands be allowed to go in-line, perhaps in the pointer field, like the password can be expressed in a Login ORB. Fuller noted that 12 bytes of CDB space (yielding a normal 32 byte ORB) could also transport many AVC commands. Johansson noted that ORBs can be up to 1020 bytes in SBP-2, so the data could go in the ORBs, yielding a single solution without the need for indirection. But Johansson added that large responses would still need to use a buffer described by the ORB. Anderson noted that small responses could be sent back in the Status Block (which is limited to 32 bytes), optionally, to reduce traffic. Fuller said he is still working on the issues.

Item [4.5] (Operational description of Login) was carried over.

[4.6] Anderson noted that Sho Kou had granted time in the AV Working Group's agenda for their next meeting.

[5] Johansson distributed an interim draft, and noted that the changes from the last posted draft were minor.

Johansson described minor changes in section 7.4 (Unit Directory) from discussion at the previous meeting.

Johansson noted that reorganization within chapter 7 had created a new section 7.6 summarizing the usage of Configuration ROM entries.

Johansson remarked that the Firmware revision entry (section 7.6.6) had been changed to be optional in both Unit and Logical Unit directories, while not being inherited.

Fuller and Anderson agreed to that Unit Unique ID (7.6.13) should not be allowed in a Logical Unit Directory.

Anderson noted that table 7.6 implies that Command Set Spec ID (7.6.3) and Command Set (7.6.4) are fully optional, but in truth they must both appear somewhere, so the table could be misunderstood. Johansson agreed to revise the draft accordingly.

Johansson noted that the sections following the table had been edited regarding what directory each item could be found in.

[6.1] Johansson reviewed changes to his document regarding RBC commands for extent management. The latest version is:

ftp://ftp.t10.org/t10/document.01/01-180r1.pdf

Johansson explained that the revised document now allowed the Extent Directory to be accessed in a piecewise manner, in case it was large.

Green noted that in table 2b the default extent should be identified by four bytes, not two, and Johansson agreed.

The group edited the last paragraph of 5.0a in 01-180r1 for improved clarity.

Johansson noted that in section 5.0b there is an open question about data formats. Nobody present was able to offer a clear set of requirements for how to

associate parameters with a track. Fuller and Green each noted that they have been studying AVC specifications and might have more to suggest in the future.

Johansson showed that FREE, TOTAL, and LONGLBA bits had been added to table 5.

Johansson noted that the piecewise extent read capability and table 5 changes were the only significant changes. Fuller said that more study was needed before trying to launch an official project in conjunction with other groups to standardize these commands.

Johansson asked if the SBP-3 group could finish its work without a complete AV command set, i.e. by specifying the transport and mechanisms but not the actual commands. Fuller said this was probably possible. Johansson said he was less certain. Anderson suggested that if the group validated SBP-3 against some sample command set, SBP-3 could be completed even if that command set later changed, and there would be good odds that SBP-3 would still provide the required services. Fuller suggested IMC (Isochronous Media Commands) as a command set name. Johansson suggested the work could be tracked by a lightweight study group until it became more solid, at which time an official, standards-producing home could be found for the work.

[7.1] Johansson presented a write-up of the previously discussed Distributed Data Buffer enhancement:

ftp://ftp.t10.org/t10/document.01/01-200r0.pdf

Anderson mentioned confusion in section 5.2 about which speed and transfer size settings to honor for a local buffer described by a node selector, those in the ORB or those in the selector. Johansson acknowledged the problem and said he would revise the text.

The group agreed to roll the proposal into draft, then also made further edits to the proposal.

[7.2] Anderson suggested the group consider how isochronous SBP-3 services could be applied to devices other than those recording AV media onto a hard disk drive, such as printing and scanning devices.

Johansson suggested that a scanner could be sent a single ORB to command it to scan a page, specifying the transfer speed, packet size, and isochronous channel number, as well as specific scanning command details. Anderson noted that the login/reconnect features of SBP might be desirable for scanners and

printers, to achieve orderly sharing by multiple initiators. Anderson suggested that a pause type of command might be command set independent, even if command sets such as AVC already had specific commands for such purposes.

Anderson described various ways to perform reliable transfer with isochronous services, but could not describe a clear way that SBP would help to accomplish this.

Fuller noted that in a printing application, multiple printers could receive the same isochronous channel and print the same image, which was not possible with asynchronous SBP-2.

Anderson noted that if SBP was used to access a printer or scanner, additional commands could be executed through SBP such as media change, status inquiry, etc.

The group reviewed Firooz Farhoomand's past presentation regarding DVD players to see what could be done to support the goal stated therein:

ftp://ftp.t10.org/t10/document.01/01-103r0.pdf

Some concluded that Farhoomand wanted isochronous delivery from a DVD to avoid asynchronous congestion. Johansson suggested this goal was at least as compelling a reason for isochronous services as printing and scanning. Johansson noted that an ORB specifying an isochronous channel number, speed, and transfer size could transport an MMC command for DVD READ that would cause the data to be delivered.

Anderson suggested that SBP-based isochronous transfer could allow additional ORBs to be used to implement a reliable transport, even if SBP did not define all the details of how this scheme would work.

The group discussed pages 7-8 of the previous minutes:

ftp://ftp.t10.org/t10/document.01/01-187r0.pdf

Anderson explained that in the example, the RECORD command carried an explicit time (HHMMSSFF) representing an embedded timecode in the media stream being received at which the initiator wanted data to start being recorded. The "BUSTIME = Immediate" shown in the corresponding ORB indicates that recording is to start as soon as data becomes available, in this case as selected by the format-aware implementation executing the CDB. Johansson added that

in other uses of SBP-3 the start time might be precisely specified in the ORB rather than the CDB, such as by cycle number, header sync pattern, etc.

Fuller and Johansson discussed the relative merits of AVC-type plugs for expressing the existence of isochronous communication, so that 1394.1 bridges could carry such transfers from one 1394 bus to another.

Johansson said that the Fast Start work from the previous meeting was on his to-do list.

Anderson and Green discussed Wooten's modified Fast Start proposal. Green and Johansson agreed that one of them would write up draft text for future inclusion.

A survey showed that most present felt they would likely attend the August 22-23 (Wed-Thu) meeting in Cupertino: Anderson, Johansson, Farrell, Fuller, and Green.

The groups elected October 3-4 as a future East coast meeting date, November 6-7 as a Monterey meeting date, and tentatively agreed to hold no meeting in December unless the group's workload increased unexpectedly. The group also planned to hold a January meeting adjacent to the 1394 TA Quarterly Meeting.

Green circulated draft text for the new MP-friendly Fast Start mechanism (as proposed by Wooten). The group worked out various changes, and Green said he would post a revised draft.

Adjourned.

General information and document index

The SBP-3 email reflector SBP3@isg.apple.com can be accessed as follows:

Subscribing:
email requests@isg.apple.com w/subject "subscribe sbp3"

Help?:
email requests@isg.apple.com w/subject "help"

An automated system had been created for the allocation of T10 document numbers, and the subsequent submission of documents for posting:

http://www.t10.org/members/ad.htm

The following documents have been posted pertaining to SBP-3:

00-328 Eric Anderson
Fast Start proposal (PowerPoint slides)
ftp://ftp.t10.org/t10/document.00/00-328r0.pdf

00-371 Peter Johansson
Minutes of SBP-3 Study Group September 19, 2000
ftp://ftp.t10.org/t10/document.00/00-371r0.pdf

00-388 Peter Johansson
SBP-3 Project Proposal
ftp://ftp.t10.org/t10/document.00/00-388r0.pdf

01-057 Eric Anderson
Fast Start Proposal
ftp://ftp.t10.org/t10/document.01/01-057r0.pdf

01-060 Eric Anderson
Minutes of SBP-3 Working Group January 24-25, 2001
ftp://ftp.t10.org/t10/document.01/01-060r0.pdf

01-067 Lance Flake
RBC Access For AV/C Data Interchange
ftp://ftp.t10.org/t10/document.01/01-067r0.pdf
ftp://ftp.t10.org/t10/document.01/01-067r1.pdf

01-070 Peter Johansson
Bridge-aware targets and node handles
ftp://ftp.t10.org/t10/document.01/01-070r0.pdf

01-101 Eric Anderson
Minutes of SBP-3 Working Group March 6-7, 2001
ftp://ftp.t10.org/t10/document.01/01-101r0.pdf

01-102 Scott Smyers
Proposal for modifications to SBP3 and RBC
ftp://ftp.t10.org/t10/document.01/01-102r0.pdf

01-103 Firooz Farhoomand

Using SBP-3 for DVD playback
ftp://ftp.t10.org/t10/document.01/01-103r0.pdf

01-137 Peter Johansson
Stream command block ORB
ftp://ftp.t10.org/t10/document.01/01-137r0.pdf

01-138 Peter Johansson
Bi-directional ORBs (PowerPoint slides)
ftp://ftp.t10.org/t10/document.01/01-138r0.pdf

01-139 Eric Anderson
Minutes of SBP-3 Working Group April 26-27, 2001
ftp://ftp.t10.org/t10/document.01/01-139r0.pdf

01-179 Andy Green
Proposal to modify isochronous recording format
ftp://ftp.t10.org/t10/document.01/01-179r0.pdf

01-180 Peter Johansson
RBC-2 commands for extent management
ftp://ftp.t10.org/t10/document.01/01-180r0.pdf

01-187 Eric Anderson
Minutes of SBP-3 Working Group June 5-6, 2001
ftp://ftp.t10.org/t10/document.01/01-187r0.pdf

01-200 Peter Johansson
Distributed Buffers
ftp://ftp.t10.org/t10/document.01/01-200r0.pdf

01-223 Eric Anderson
Minutes of SBP-3 Working Group July 17-18, 2001
ftp://ftp.t10.org/t10/document.01/01-223r0.pdf

01-248 Peter Johansson
MP-friendly Fast-Start
ftp://ftp.t10.org/t10/document.01/01-248r1.pdf

Latest draft SBP-3 document:

ftp://ftp.t10.org/t10/drafts/sbp3/sbp3r01d.pdf

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