Accredited Standards Committee*
**X3, Information Technology**

**Doc. No.:** X3T10/95-034 r1
**Date:** June 20, 1995
**Project:**
**Ref. Doc.:** 95-014 -- 95-024
**Reply to:** Mr. John Lohmeyer
Symbios Logic, Inc.
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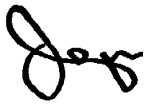

To: X3T10 Membership
From: John Lohmeyer, X3T10 Chair
Subject: Results of X3T10 Letter Ballots 95-014 through 95-024

The results of the eleven letter ballots were (Yes:No:Abstain:No Response):

| | | |
|---|---|---|
| 39:12:4:4 | 95-014 | Recommendation to form new ATA TC |
| 50:4:0:5 | 95-015 | ATA+PI Project Proposal |
| 54:0:0:5 | 95-016 | SPI-2 Project Proposal |
| 54:0:0:5 | 95-017 | ESPC Project Proposal |
| 54:0:0:5 | 95-018 | FCP-2 Project Proposal |
| 53:0:0:6 | 95-019 | SSA-PH1 Project Proposal |
| 54:0:0:5 | 95-020 | SSA-PH2 Project Proposal |
| 53:0:0:6 | 95-021 | SSA-TL1 Project Proposal |
| 54:0:0:5 | 95-022 | SSA-TL2 Project Proposal |
| 52:1:0:6 | 95-023 | SSA-S2P Project Proposal |
| 54:0:0:5 | 95-024 | SSA-S3P Project Proposal |

All ballots passed. The first (95-014) only requires a simple majority. I will forward the voting results to X3/OMC. The remaining ballots all received at least one comment. Comment resolution for ballots 95-015 through 95-018 will be on the X3T10 agenda for the July meeting. Comment resolution for ballots 95-019 through 95-024 will be referred to X3T10.1 for their June meeting.

The following table gives the voting details:

| Organization | Voting Member | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3M Company | Mr. Alan R. Olson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Adaptec, Inc. | Mr. Norm Harris | | | Y | Y | Y | | | | | | | |
| Adaptec, Inc. | Mr. Lawrence Lamers (A) | Y | Y | | | | Y | Y | Y | Y | Y | Y | |
| Advanced Micro Devices | Mr. Ron Apt | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Amdahl Corp. | Mr. Edward Fong | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| AMP, Inc. | Mr. Charles Brill | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Amphenol | Mr. Michael Wingard | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Ancot Corp. | Mr. Jan V. Dedek | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Apple Computer | Mr. Ron Roberts (A) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| AT&T | Mr. Joe Lawlor | - | - | - | - | - | - | - | - | - | - | - | |
| Burr-Brown Corp. | Mr. Dennis R. Haynes | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | All IV |
| BusLogic | Mr. Clifford E. Strang | - | - | - | - | - | - | - | - | - | - | - | |
| Ciprico Inc. | Mr. Gerry Johnsen | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Circuit Assembly Corp. | Mr. Ian Morrell | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Cirrus Logic Inc. | Mr. Joe Chen | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| CMD Technology | Mr. Edward Haske | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Congruent Software, Inc. | Mr. Peter Johansson | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Conner Peripherals | Mr. Michael Bryan | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Dallas Semiconductor | Mr. Louis Grantham | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Digital Equipment Corp. | Mr. Charles Monia | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | IV on 22 only |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Eastman Kodak Co. | Mr. Robert Reiseh | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| ENDL | Mr. I. Dal Allan | Y | N | Y | YC | Y | Y | Y | Y | Y | Y | Y | |
| Exabyte Corp. | Mr. Edward Lappin | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | IV on all |
| FSI Consulting Services | Mr. Gary R. Stephens | Y | n | Y | Y | Y | n | Y | n | Y | n | Y | no cmnts rcvd |
| Fujitsu | Mr. Robert Liu | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Future Domain Corp. | Mr. Kevin J. Calvert (A) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Hewlett Packard Co. | Mr. Stephen Holmstead | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Hitachi | Mr. S. Nadershahi | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Honda Connectors | Mr. David McFadden | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| IBM Corp. | Mr. George Penokie | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| IIX Consulting | Mr. Duncan Penman | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Interphase Corp. | Mr. David Lawson | - | - | - | - | - | - | - | - | - | - | - | |
| Iomega Corp. | Mr. Geoffrey Barton | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Linfinity Micro | Mr. Dean Wallace | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Madison Cable Corp. | Mr. Robert Bellino | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Maxoptix Corp. | Ms. Donna Pope | - | - | - | - | - | - | - | - | - | - | - | |
| Maxtor Corp. | Mr. Pete McLean | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Methode Electronics, Inc. | Mr. Bob Masterson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Molex Inc. | Mr. Joe Dambach | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| NEC | Mr. Chris D'Iorio | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Oak Technology, Inc. | Mr. Peter Brown | Y | Y | n | n | n | n | n | n | n | n | n | no cmnts rcvd |
| Panasonic | Mr. Stephen F. Heil | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| QLogic Corp. | Mr. Skip Jones | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Quantum Corp. | Mr. James McGrath | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Seagate Technology | Mr. Gene Milligan | N | N | YC | YC | YC | YC | YC | YC | YC | N | YC | 16--24IV |
| Sequoia | Mr. Thomas 'Rick' Tewell | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Silicon Systems, Inc. | Mr. Stephen G. Finch | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Sony | Mr. Scott Smyers | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Storage Technology Corp. | Mr. Erich Oetting | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Sun Microsystems, Inc. | Mr. Robert N. Snively | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Symbios Logic, Inc. | Mr. John Lohmeyer | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 14,15IV |
| SyQuest Technology | Mr. Patrick Mercer | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Tandem Computers | Mr. John Moy | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Thomas & Betts | Mr. Harvey Waltersdorf | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Trimm Technologies | Mr. Gary M. Watson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| UNISYS Corporation | Mr. David Hudson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Unitrode | Mr. Paul D. Aloisi | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Western Digital | Mr. Jeff Stai | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Western Digital | Mr. Thomas Hanan (A) | Y | N | | | | | | | | | | |
| Woven Electronics | Mr. Doug Piper | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Zadian Technologies | Mr. Dennis P. Moore | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |

Key:
Y Yes vote
YC Yes vote with comments
N No vote with comments
n No vote without comments (treated the same as No Response)
A Abstain
- No Response (did not return ballot)
IV Marked 'Individual Vote' for specified ballots

## Comments received for ballot X3T10/95-014 (Recommendation to form new ATA TC):

**Ciprico Inc. (Gerry Johnsen):**

Ciprico votes no with the following comments:

1) Both SCSI and ATA are primarily specifications for the attachment of storage peripherals to small computer systems and therefore have many areas of overlap both in terms of technical specifications and the companies involved. Splitting the interfaces into multiple subgroups in and of itself will not improve either.

2) Creating multiple standards bodies with different meeting sites and dates will make participation by smaller companies more difficult and expensive.

**Congruent Software, Inc. (Peter Johansson):**

This memorandum accompanies the NO vote I submitted in response to X3 Subgroup Letter Ballot X3T10/95-014r0. The reasons for Congruent Software's opposition to the formation of a new Technical Committee under X3 to be assigned the ATA projects 791-M, 948-D, 1120-D and 2008-D are given below.
At this point in the development of SCSI and ATA, the common command set utilized represents an immense investment in systems software. Any move that tends to lessen close coordination and cooperation between SCSI and ATA standards development efforts would inevitably tend to lessen the interoperability of this shared command set base. Congruent Software considers any such move regressive and not in the best interests of the industry as a whole.

A second, important ground for objection is procedural. At the Harrisburg plenary it was clear that a significant number of the advocates of a split between ATA and SCSI wish to concentrate the meetings in California and hold plenary sessions more often than bimonthly. This appears to be a contravention of the Rules and Procedures of X3, X3/SD-2 sections 4.3.1 and 4.3.2. The reason for the procedures, as I understand them, is to avoid placing undue burdens of travel expense and commitment of personnel time upon participants. Although Congruent Software itself would be advantaged by meetings concentrated in California, others would be penalized. With respect to increased frequency of meetings and the need to cover both ATA and SCSI meetings at different locations and different times, any participating company (not just small companies such as ourselves) would have to bear a great increase in cost and time, to little benefit.

**Eastman Kodak Co. (Robert Reiseh):**

The ATA projects are involved in resolving standards issues for computer storage peripheral devices that have the same fundamental issues found in SCSI devices. Therefore the ATA group should remain a part of X3T10.

**Exabyte Corp. (Edward Lappin):**

I am voting NO on the recommendation that X3 establish a new Technical Committee to be assigned the ATA projects. A working group vote of 9-4, while better than 2 to 1, is not a strong consensus. Without that strong desire to form a new TC, even from all that were present for the particular vote, I do not see a very good chance for success. Therefore, I feel I must vote no at this time. However, a stronger positive consensus could alleviate my reservations about recommending the formation of a new TC.

**Hewlett Packard (Stephen Holmstead):**

Splitting the groups means twice as much overhead, including twice as many plenaries. There are many areas of common interest (e.g., MMC) which would also incur a larger burden in trying to keep the two groups in sync.

The proposed reason of encouraging more participation is vague; splitting the groups will discourage some participation that now exists.

**Linfinity Micro (Dean Wallace):**

We voted no because we would like the ATA working group to be held the same week the X3T10 meetings are held. This allows us to attend the ATA meetings. If the groups are separated we won't attend the ATA technical committee.

**Molex Inc. (Joe Dambach):**

No interest.

**Panasonic (Stephen Heil):**

In resolving the NO vote from Panasonic Technologies, Inc. regarding Letter Ballot X3T10/95-014r0, please consider the following comments as reasons for the NO vote. Panasonic Technologies, Inc., is opposed to the formation of a new Technical Committee under X3 to be assigned the ATA projects 791-M, 948-D, 1120-D and 2008-D) for two primary reasons.

1) Separating the work of ATA and SCSI (both presently assigned to X3T10) will not be conducive to industry convergence. Both ATA and SCSI are considered Low-level interface for computer peripheral devices and are therefore appropriately assigned to X3T10 given its charter of Low-level interfaces.

a) Recently, there has been a trend to bring some commonality between ATA and SCSI. This is very apparent in the more advanced ATA projects such as ATA-2, ATA-3, and ATAPI which all "borrow" significantly from SCSI. This commonality is very important at many areas in the industry especially in the area of operating systems and device drivers. ATA efforts have adopted the CDB structure of SCSI making it easier for developers and system integrators to make implementations which share development investments. This is a benefit to both manufacturers and users.

b) X3T10 has formed a Systems Issues study group which has been investing significant effort toward addressing ATA and SCSI convergence issues such as the SCSI command structure in ATAPI and is now investigating command overlap for ATA. If ATA were moved to a separate TC we would loose a important opportunity to have some level(s) of compatibility between SCSI and ATA and instead we would be encouraging the inefficient practice of duplication of effort.

2) Segregating ATA to a separate TC will significantly hinder the opportunity for Panasonic Technologies, Inc. and other companies to participate in the process of developing these standards.

a) At the May meeting of X3T10 in Harrisburg, PA, it was very apparent that a primary reason to form a new TC for ATA was to limit the meeting locations to the California area. This places member companies not located in that geographic area at a significant disadvantage because of the increased travel cost and time investment necessary to participate.

b) It was also apparent at the Harrisburg meeting of X3T10 that there was an intent to increase the frequency pf the ATA meetings. This too places member companies not located in that geographic area at a significant disadvantage.

c) Limiting meeting location and having meetings more frequently that six times per year appears to be direct violations of the X3/SD-2, Organization, Rules and Procedures of X3, sections 4.3.2 and 4.3.1 respectively.

**QLogic Corp. (Skip Jones):**

I voted no these two ballots because I believe the commonalties between ATA, ATAPI, and SCSI do not appropriately facilitate segregating their committees from X3T10.

Included amongst these commonalties are functionality and logistics.

ATAPI borrows SCSI commands, SCSI multi-thread models, and attempts to operate over the same host drivers designed for SCSI. Separate committees only ensures further alienation between the protocols and their implementations, thereby increasing market fragmentation unnecessarily.

Additionally, the companies and their representatives which have a vested interest in one of these protocols (that is, ATA and SCSI) typically have a vested interest with the other protocol. Separate meeting locations at separate times typically serve only the one or two companies and/or individuals that attempt to manipulate and steer the standards process for their own self-serving gratification. Rarely does segregation facilitate the standards process over a fair cross-section of industry participants.

Quantum Corp. (Jim McGrath):

I will send you email [none was received] but briefly the creation of a new TC does not appear to offer benefits comparible to its cost (more meetings, possible divergence from X3T1 activities).

**Seagate Technology, Inc. (Gene Milligan):**

The following comments accompany Seagate's NO vote on the recommendation to form a new Technical Committee for ATA projects:

1) An important function standards bodies should provide is intelligent management of alternatives to bring order to the market place served by the standards group. This function is weakened by creation of too many Technical Committees. The fact of this as an issue is attested to by the reactions of the X3T10 membership to the formation of IEEE P1285.

2) The ATA and SCSI projects have benefited from having a wide variety of company participants. It is difficult to provide consistent participation in standards meetings more often than once per month. For many of the participants vitally concerned with ATA projects, the existence of X3T10 and X3T11 already require one plenary per month. Creation of an additional peripheral interface Technical Committee will result in a 50% overload factor.

3) In general the peripheral interface Technical Committees have suffered from an imbalance between the component, peripheral device, and host system manufacturers and certainly with end users. Creation of a third Technical Committee to define peripheral interfaces undoubtedly will aggravate this imbalance.

4) For the smaller systems (as opposed to mainframes and very largesubsystems) X3T10 has established an operating environment that has served the market well. The dynamics of X3T10 has avoided conflict between standards alternatives such as SCSI, ATA, and ATAPI.

5) The more vocal advocates of creating a new Technical Committee have alleged that the creation of the new Technical Committee will free the ATA projects of the cumbersome X3T10 procedures. Their suggestion must result from one of the following cases:

a) The advocates have not yet participated enough in the X3T10 process to understand that they are not shackled, but are participating in an open standards process which operates in accordance with X3 procedures which have been accredited by ANSI.

b) The advocates have an expectation that they will be given cart blanche as a new Technical Committee to operate as they did as a closed specification development association.

**Sequoia (Thomas ‘Rick’ Tewell):**

The direction of evolving ATA into a separate entity from the family known as “SCSI” is misguided. In a period when companies seek to combine technologies rather than separate them, it does not seem reasonable for ATA to “separate”. This seems to be much more a “political” effort rather than a technical one and we are opposed to it.

**Storage Technology Corp. (Erich Oetting):**

Storage Technology Corporation has abstained from voting to establish a new Technical Committee for ATA projects.

We feel the decision on forming a new Technical Committee should be left to those organizations with more direct involvement in ATA technology.

**Sun Microsystems, Inc. (Robert N. Snively):**

I find that I am forced to vote against the approval of recommending that X3 establish a new Technical Committee to be assigned the ATA projects (791-M, 948-D, 11200-D, 2008-D).

1) I believe that the convergence of the command sets for ATAPI and SCSI, especially in the area of CD-ROM commands, is essential to provide a wide and common software support base for CD-ROM devices. I believe that this convergence will be more difficult to achieve if ATAPI and SCSI do not exchange their ideas in a close committee relationship. In particular, it is very important that the new ATAPI concepts be brought into the SCSI CD-ROM command set.

2) There are many examples of successful and timely standard developments having quite different technologies and architectural bases within a single committee. Such examples include HIPPI, IPI, ESCON, and Fibre Channel within X3T11 (formerly X3T9.2). I believe that this model is an appropriate model for the ATA and SCSI projects within X3T10. I had believed that this model was essentially what had been happening within X3T10 and am surprised that this question has even been raised. If the ATA participants feel that the working environment within X3T10 is somehow inadequate, it is in their interest and X3T10's interest to improve the relationship, rather than destroy the relationship.

3) Working with two committees will force my company to spend more resources to be sure that our interests (including convergence of the command sets and functional capabilities of CD-ROMs) are properly met. Most of the key companies participating in the ATA activities are also participating in the SCSI activities and vice versa. For that reason, I believe that most X3T10 member companies will have the same problem. I also believe that the management of those companies would have a strong interest in coordinating and advancing both the ATA and SCSI activities together, since they address complementary marketplaces.

**Symbios Logic (John Lohmeyer):**

I have abstained on this ballot. OMC and X3 will have to deal with this issue and either outcome of splitting X3T10 or leaving it together will result in problems. There are factions of the ATA group that believe separation will solve all their problems. I think this opinion is naive, but they may need to experience this for themselves. I think separation will mostly result in pushing conflict resolution to higher levels (e.g., Public Review and X3).

**SyQuest Technology (Patrick Mercer):**

I have voted NO on X3 Subgroup Letter Ballot X3T10/95-014r0 to establish a new Technical Committee to be assigned the ATA projects.

I feel that the SCSI and ATA projects should be brought closer together, rather than separated. I am in favor of the SCSI and the ATA groups maintaining a close communication and being well informed of each others activites, which is enhanced by having both groups under X3T10 and would be seriously jeopardized by splitting them up. My personal feeling is that there is already a subtle hostility between the SCSI and ATA groups, which I believe is detrimental, which would be made worse by this proposal.

I am also concerned that the overall number of meetings will become excessive and those wishing to atttend both project meetings would be forced into choosing one or the other.

## Comments received for ballot X3T10/95-015 (ATA+PI Project Proposal):

**ENDL (Dal Allan):**

I originally voted in favor of ATA+PI as it seemed like the right way to go for long term merging of two important markets.

However, upon re-reading the proposal I was drawn to the repugnant implication that the objective is to kill the existing ATA-3 and ATAPI projects by replacing them with ATA+PI.

This negative can be converted to Yes by clearly stating that the objective is not to slow down progress on completing ATA-3 and ATAPI, and is a follow- on activity.

If the objective is to delay all standards progress on ATA-3 and ATAPI in an effort to create a stronger alloy of ATA+PI forged in the fire of dispute and acrimony then my ambivalent negative becomes an emphatic negative.

**QLogic Corp. (Skip Jones):**

Merging ATAPI and ATA while simultaneously splitting ATA off into it's own committee effectively results in splitting ATAPI off into it's own committee.

I have no problem with merging ATAPI and ATA AS LONG AS ATA does not split into it's own. Therefore, until the split issue is resolved I'll be voting NO to put anything into ATA.

**Seagate Technology (Gene Milligan):**

The following comments accompany Seagates NO vote on the proposal to combine the existing ATA-3 and ATAPI projects into a single project and into a single document:

1) The existing projects are progressing well and have established expectations in the market place that are being fulfilled. Diverting these projects at this stage, to save host bus adapter manufacturers from purchasing two ANSI standards is not an appropriate tradeoff in view of the delays that are likely from changing in midstream.

2) The goal of making the host bus adapter requirements clearer for the two applications ATA and ATAPI would be better served by either a set of profiles (e.g. a PCI Profile) and/or standards addressing host adapters.

3) For disc drives, the ATA standard has facilitated the high volume market place by staying free of a plethora of options. The lack of options avoids confusion in the market place. The corollary is that for high volume the disc drive may likely need to implement nearly all, if not all options. The expectations for ATA-3 have been progressing with that in mind. It is likely that having ATA and ATAPI in separate standards will not impinge too much on this important aspect. However having an optional ATAPI mode in the same standard will be highly confusing to the disc drive ATA market.

4) For ATAPI CD-ROM and Tape applications combining ATA and ATAPI may delay the availability of the initial ANSI standard and may also result in confusion over the allowable options.

5) The target date for a dpANS forwarded to X3 of June 1996 is reasonable for the combined document and is illustrative of the delay referred to in the above comments.

6) The statement that there are no known legal considerations is not accurate. At least two patents have already been identified in the ATA project.

7) The recommendations for close liaison assume the formation of a new Technical Committee. We are opposed to the formation of a new Technical Committee and note that the ATA and ATAPI projects are better served by the direct participation of the impacted organizations within X3T10.

**Western Digital Corp. (Thomas Hanan):**

This item should be addressed in T13.

## Comments received for ballot X3T10/95-016 (SPI-2 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project SPI-2:

1) SPI-2 should be a new addition of SPI not a revision. Delete revise SPI to.

2) According to the balance of the proposal SPI-2 will be faster than Fast-20. Delete and would incorporate Fast-20 into SPI-2 (it is currently a separate draft standard) from the needs.

3) It has been the recent practice of X3T10 to leave connector issues to other groups to conserve X3T10 resources for items that are more central to their scope. Consequently 2.2. (b) should either be deleted or expanded to include the SCA connectors.

4) Although the title of 3.7 indicates a duration, either for one day should be deleted or made more flexible.

5) I think 4.4 is not correct. I think at least AMP has identified patents and if SPI-2 includes SCA I know this to be the case.

## Comments received for ballot X3T10/95-017 (ESPC Project Proposal):

**ENDL (Dal Allan):**

I vote in favor of the project and vote against the acronym.

ESPC can all too readily be confused with Enhanced/Extended SPC (SCSI-3 Primary Commands).

This project is unique to parallel SCSI, so parallel ought to be a discrimination factor in the title and as this is a physical interface it ought to have an I to imply 'interface' rather than a C to imply 'Commands'.

If we are to go to 4-letter acronyms then I suggest ESPI for Enhanced SPI (SCSI-3 Parallel Interface)

Dropping back to 3-letter acronyms:

EPC for Enhanced Physical Configuration has less to dislike but it still does not imply the physical interface.

My preference is EPI for Enhanced Parallel Interface.

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for ESPC:

1) To provide a vector for document order entry, add SCSI to an appropriate place in the title.

2) Delete the last paragraph of 2.1. It is not clear and misleading and probably wrong.

3) For the same reason delete the first paragraph of 2.2. I suspect a high degree of compatibility or my concept of interoperability is intended rather than compatibility.

4) I can not agree to item (g) being included in the scope without knowing much more about what this statement means.

5) A technical report does not document. Change 2.3 by deleting documenting the and deleting however, the ESPC technical report would serve to document these applications rather than invalidate them.

6) Change section 2.4 from a standard to a technical report.

7) Change section 3.3 to Not Applicable as the text.

8) Change 3.5 to ... the subject matter

9) Although the title includes duration, either delete for one day or make it more flexible.

10) Change the text of 4.2 and 4.3 to Not Applicable.

11) I think 4.4 is misleading. I dont think the ANSI patent policy is applicable to technical reports. I think the text should be changed to Not Applicable.

12) Why is SCSI-2 a closely related standard?

13) I think 5.2 should be expanded and certainly SIP is a candidate.

## Comments received for ballot X3T10/95-018 (FCP-2 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for FCP-2:

1) This is not a SCSI-2 project. Either change SCSI-2 to SCSI-3, SCSI-4, or SCSI. Alternatively change the title to Fibre Channel Protocol - 2 for SCSI (FCP-2).

2) In the needs delete and harmonize the document with other SCSI-3 standards.

3) The second paragraph in needs may be an appropriate thing to do during the project but it should be deleted from the needs.

4) Item (a) in 2.2 may be an appropriate thing to do during the project but it should be deleted from the candidates.

5) Although the title indicates duration either delete the durations or make them more flexible.

6) In 5.1 and 5.5 delete SCSI-2.

7) In 5.2 add FC-AL, FC-PH2, and the SCSI-3 command sets.

## Comments received for ballot X3T10/95-019 (SSA-PH1 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for the SSA Physical layer 1:

1) Line fault detector for links is not a clear goal.

2) It seems that the physical layer does not have anything to do with preserving the capability to transport SCSI commands. I think section 2.4 should be changed by changing while preserving the capability to transport SCSI command and status information to which can transport SCSI command and status information.

3) I see no reason that SCSI-2 is a closely related standard.

4) Much of the SSA project proposals share common text, see my comments on letter ballot X3T10/95-024r0 for generic comments on the proposal.

## Comments received for ballot X3T10/95-020 (SSA-PH2 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for the SSA Physical layer 2:

1) It seems that the physical layer does not have anything to do with preserving the capability to transport SCSI commands. I think section 2.4 should be changed by deleting  while preserving the capability to transport SCSI command and status information.

2) The title of  3.5 is peculiar. Everyone is competent in subject matter but that is not pertinent. The important aspect is the subject matter rather than subject matter.

3) SSA-PH2 from a standards point is not an initial implementation point. In section 4.1 change provide an initial implementation point to be.

4) I see no reason that SCSI-2 is a closely related standard.

5) Much of the SSA project proposals share common text, see my comments on letter ballot X3T10/95-024r0 for generic comments on the proposal.

## Comments received for ballot X3T10/95-021 (SSA-TL1 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for the SSA Transport layer 1 :

1) It is not clear due to the cover page and the title being different which layer this proposal is addressed to. The lack of clarity in the scopes of these project proposals does not help this confusion.

2) It is not clear at all what a web topology is and therefore it is not clear why their support is a need. Perhaps Web Topology should be addressed by section 3.2.

3) Section 3.2 should also define the special term minize used in the goals.

4) It seems that the transport layer does not have anything to do with preserving the capability to transport SCSI commands since this is an initial set of SSA standards. I think section 2.4 should be changed from while preserving the capability to transport SCSI command and status information to which transports existing and anticipated SCSI command and status information.

5) It is not clear whether this proposal is expected to be a new project or that it should have been submitted as a revision to Project 0989 D. Is it expected that OMC will study the proposal closely enough that they assign it Project 0989 D upon approval or that after some new number is assigned X3T10 will process a request to withdraw Project 0989 D?

6) The contents and title of section 5.3 seem to have been scrambled.

7) Much of the SSA project proposals share common text, see my comments on letter ballot X3T10/95-024r0 for generic comments on the proposal.

## Comments received for ballot X3T10/95-022 (SSA-TL2 Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for a SSA Transport layer 2:

1) Web topology is not an understood term and is not clear as to why that is a need. If it is a need web topology should be defined in section 3.2.

2) SCSI-2 is not a closely related standard.

3) Much of the SSA project proposals share common text, see my comments on letter ballot X3T10/95-024r0 for generic comments on the proposal.

## Comments received for ballot X3T10/95-023 (SSA-S2P Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligan's NO vote on the proposed new project for mapping SCSI-2 command sets onto the SSA transport layer and physical interface:

1) If this project proposal is approved it will create an unnecessary standard which is redundant to the new project for mapping SCSI-3 command sets onto the SSA transport layer and physical interface. SCSI-2 command sets are a compatible subset of the SCSI-3 command sets. Therefore the SCSI-3 mapping is by definition compatible with SCSI-2.

2) Having two simultaneous standards to accomplish the same thing is fraught with danger. Unless the documents are identical they will very likely result in incompatible implementations due to using a different source document for the implementation.

3) Much of the SSA project proposals share common text, see my comments on letter ballot X3T10/95-024r0 for generic comments on the proposal.

## Comments received for ballot X3T10/95-024 (SSA-S3P Project Proposal):

**Seagate Technology (Gene Milligan):**

The following comments accompany Gene Milligans YES vote on the proposed new project for mapping SCSI-3 command sets onto the SSA transport layer and physical interface:

1) It is not clear, and probably wrong that configurability results from a 10 meter length of cable. I assume the configurability would not be reduced by a 11 meter length.

2) There is no need for an implementation of SCSI-3 features on a serial interface. X3T10 has already forwarded two such protocols for serialinterfaces (FC and 1394). The last sentence in 2.1 should change a serial interface to the SSA serial interface.

3) It seems to me SAM should be just a related standard. It is a requirement not a goal and mapping does not apply.

4) Just as purely editorial comments, the goals should be stated in the same form. In (b), which should be (a) replace define the with support for and delete provide in the present (d) and (e).

5) Related to the untitled figure, these comments will be made without accounting for the fact that the SSA-S2P project should not be authorized. The figure is either unclear or the projects are not appropriate. The diagonal lines imply that the SSA-PH2 will support only SSA-TL2 while SSA-PH1 will support both transport layers and that SSA-S3P can be used only with SSA-TL2 while SSA-S2P can be used on either transport layer. If such restrictions apply the restrictions should be the opposite as those shown. I suspect the depiction represents the restrictions of someones implementation rather than how the standards should be structured.

6) Having read the transport and physical layer project proposals I was unable to form an opinion on what was covered by the scope of the physical layer and what was covered by the scope of the transport layer. However the patent statements gave a slight clue.

7) Referring to item (1) in section 3.4 it is hard to swallow that SSA-UIG is an end-user organization. As far as I know it, or its successor is a consortia of manufacturers without membership of organizations like Mutual of Omaha or the South Side Computer Club.

8) It would be more useful, I think, to give an estimate of the minimum useful life rather than the maximum since the maximum is satisfied by no useful life.

9) In terms of a SCSI-3 commands mapping protocol SCSI-2 does not have relevance. However I would not object to its inclusion if the SCSI-3 command mapping protocol project is rejected and a statement is added to the SCSI-3 command mapping protocol project proposal that it will provide downward compatibility (downward in my mind - perhaps upward in your mind) with SCSI-2.

10) The SSA project proposals do not have the document numbers referenced in the letter ballots.

| Organization | Voting Member | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3M Company | Mr. Alan R. Olson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Adaptec, Inc. | Mr. Norm Harris | | | Y | Y | Y | | | | | | | |
| Adaptec, Inc. | Mr. Lawrence Lamers (A) | Y | Y | | | | Y | Y | Y | Y | Y | Y | |
| Advanced Micro Devices | Mr. Ron Apt | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Amdahl Corp. | Mr. Edward Fong | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| AMP, Inc. | Mr. Charles Brill | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Amphenol | Mr. Michael Wingard | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Ancot Corp. | Mr. Jan V. Dedek | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Apple Computer | Mr. Ron Roberts (A) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| AT&T | Mr. Joe Lawlor | - | - | - | - | - | - | - | - | - | - | - | |
| Burr-Brown Corp. | Mr. Dennis R. Haynes | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | All IV |
| BusLogic | Mr. Clifford E. Strang Jr. | - | - | - | - | - | - | - | - | - | - | - | |
| Ciprico Inc. | Mr. Gerry Johnsen | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Circuit Assembly Corp. | Mr. Ian Morrell | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Cirrus Logic Inc. | Mr. Joe Chen | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| CMD Technology | Mr. Edward Haske | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Congruent Software, Inc. | Mr. Peter Johansson | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Conner Peripherals | Mr. Michael Bryan | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Dallas Semiconductor | Mr. Louis Grantham | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Digital Equipment Corp. | Mr. Charles Monia | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | IV on 22 only |
| Eastman Kodak Co. | Mr. Robert Reiseh | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| ENDL | Mr. I. Dal Allan | Y | N | Y | YC | Y | Y | Y | Y | Y | Y | Y | |
| Exabyte Corp. | Mr. Edward Lappin | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | IV on all |
| FSI Consulting Services | Mr. Gary R. Stephens | Y | n | Y | Y | Y | n | Y | n | Y | n | Y | no cmnts rcvd |
| Fujitsu | Mr. Robert Liu | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Future Domain Corp. | Mr. Kevin J. Calvert (A) | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Hewlett Packard Co. | Mr. Stephen Holmstead | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Hitachi | Mr. S. Nadershahi | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Honda Connectors | Mr. David McFadden | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| IBM Corp. | Mr. George Penokie | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| IIX Consulting | Mr. Duncan Penman | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Interphase Corp. | Mr. David Lawson | - | - | - | - | - | - | - | - | - | - | - | |
| Iomega Corp. | Mr. Geoffrey Barton | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Linfinity Micro | Mr. Dean Wallace | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Madison Cable Corp. | Mr. Robert Bellino | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Maxoptix Corp. | Ms. Donna Pope | - | - | - | - | - | - | - | - | - | - | - | |
| Maxtor Corp. | Mr. Pete McLean | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Methode Electronics, Inc. | Mr. Bob Masterson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Molex Inc. | Mr. Joe Dambach | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| NEC | Mr. Chris D'Iorio | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Oak Technology, Inc. | Mr. Peter Brown | Y | Y | n | n | n | n | n | n | n | n | n | no cmnts rcvd |
| Panasonic | Mr. Stephen F. Heil | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| QLogic Corp. | Mr. Skip Jones | N | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Quantum Corp. | Mr. James McGrath | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Seagate Technology | Mr. Gene Milligan | N | N | YC | YC | YC | YC | YC | YC | YC | N | YC | 16--24IV |
| Sequoia | Mr. Thomas 'Rick' Tewell | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Silicon Systems, Inc. | Mr. Stephen G. Finch | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Sony | Mr. Scott Smyers | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Storage Technology Corp. | Mr. Erich Oetting | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Sun Microsystems, Inc. | Mr. Robert N. Snively | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Symbios Logic, Inc. | Mr. John Lohmeyer | A | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | 14,15IV |
| SyQuest Technology | Mr. Patrick Mercer | N | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Tandem Computers | Mr. John Moy | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Thomas & Betts | Mr. Harvey Waltersdorf | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Trimm Technologies | Mr. Gary M. Watson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| UNISYS Corporation | Mr. David Hudson | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Unitrode | Mr. Paul D. Aloisi | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Western Digital Corporation | Mr. Jeff Stai | | | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Western Digital Corporation | Mr. Thomas Hanan (A) | Y | N | | | | | | | | | | |
| Woven Electronics | Mr. Doug Piper | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |
| Zadian Technologies | Mr. Dennis P. Moore | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | |