Project Proposal
For a New
X3 Technical Report

Expanded System Physical Configuration

(ESPC)

May 11, 1995

1. IDENTIFICATION OF PROPOSED PROJECT

1.1 TITLE: Expanded System Physical Configuration (ESPC).

1.2 PROPOSER: X3T10.

1.3 DATE SUBMITTED: May 11, 1995

1.4 PROJECT TYPE: DT - Development of a technical report within an X3 TC.

2. JUSTIFICATION OF PROPOSED TECHNICAL REPORT

2.1 NEEDS:

Development of SPI and Fast-20 have revealed the potential for applications of parallel SCSI to more complex physical configurations having one or more of the following features:

- a)   mixed single-ended and differential devices on separate segments of the same logical bus
- b)   higher device count (e.g. > 16 devices)
- c)   physical bus segments with branches to improve transmission line effects
- d)   extended physical bus segment lengths allowed by the propagation delay assumptions already built into the parallel SCSI protocol.
- e)   removal and replacement of devices on active buses
- f)   removal, replacement, and addition of physical bus segments in active systems
- g)   mixed power conditions in active systems

This technical report will illustrate applications of SPI and Fast-20 to areas that permit these applications while maintaining compatibility with SPI.

2.2 RECOMMENDED SCOPE OF TECHNICAL REPORT:

The proposed ESPC technical report will maintain compatibility with SPI, Fast-20, and the proposed SPI-2.

Candidates for inclusion in the ESPC technical report are:

- a)   Re-interpretation of the SCSI-2/SPI length limits as a function of cable propagation speed
- b)   oint-to-point and lightly-populated length limits for   devices
- c)
  coupled physical bus segments, redundant paths to devices
- d)
  logical unit address space for greater device count, initialization schemes, initiator/target placements.
- e)
  active SCSI bus.
- f)
  physical bus segments to active SCSI systems.
- g)   onfigurations
- h)
- l)   Other capabilities which may fit within the general scope of the ESPC technical report

2.3

The proposed project involves documenting the evolutionary extensions of the present SPI standard. Some of the proposed features are being used in various niche products; however, the ESPC technical report would serve to document these applications rather than invalidate them.

2.4 EXPECTED STABILITY OF PROPOSED STANDARD WITH RESPCECT TO CURRENT AND POTENTIAL TECHNOLOGICAL ADVANCE:

The nature of the proposed project is to promote and enhance compatibility of the proposed extensions to SPI and Fast-20. This should insure that current investments in SCSI are provided with more stability in the face of technological developments..

3. DESCRIPTION OF PROPOSED PROJECT:

3.1 TYPE OF DOCUMENT: Technical Report.

3.2 DEFINITION OF CONCEPTS AND SPECIAL TERMS: None.

3.3 EXPECTED RELATIONSHIP WITH APPROVED X3 REFERENCE MODELS:

The ESPC technical report is intended for use in closed systems.

3.4 RECOMMENDED PROGRAM OF WORK:

The following program of work is planned for the ESPC technical report:

(1)   Solicit continuing participation by the current membership of X3T10 through X3 procedures. Invite comments and proposals from organizations that may have a contribution to the ESPC technical report.

(2)   Prepare a draft techical report based on proposals submitted and other information gathered during the initial investigation.

(3)   Consider the results of ESPC testing as may be available to the committee through the voluntary efforts of the X3T10 membership.

(4)   Submit the draft technical report to X3 for further processing.

3.5 RESOURCES - INDIVIDUALS AND ORGANIZATIONS COMPETENT IN SUBJECT MATTER:

The current membership of X3T10 includes representatives from all parts of the computer industry, from semiconductor chip manufacturers to large mainframe system manufacturers as well as government agencies. The members of X3T10 have expressed their desire to participate and cooperate in the development of this proposed technical report.

There are sufficient resources to complete the development of this technical report without delaying work on other projects.

3.6 RECOMMENDED X3 DEVELOPMENT TECHNICAL COMMITTEE:

It is recommended that the development work be done in Technical Committee X3T10 which is responsible for developing the family of SCSI standards.

3.7 ANTICIPATED FREQUENCY AND DURATION OF MEETINGS:

Technical Committee X3T10 meets for one day bi-monthly. Specific task ad hoc groups are called as may be required for one to three days between the regular meetings but their results are not binding.

3.8 TARGET DATE FOR DPANTR TO X3: May 1997.

3.9 ESTIMATED USEFUL LIFE OF TECHICAL REPORT:

It is anticipated that this technical report will have a life of 5 years.

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4.1

The proposed ESPC technical report will provide an evolutionary growth path to the existing practices and investments. It is likely that any isolated negative impacts would occur in any case

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The committee will consider the results of ESPC testing as may be available to the committee through the voluntary efforts of the various participants in X3T10. With this method all costs are

adjunct of their normal development costs.

4.4 LEGAL CONSIDERATIONS:

There are no known legal considerations. A Call for Patents will be made.

CLOSELY RELATED STANDARDS ACTIVITIES

EXISTING STANDARDS:

5.2

Project 0855-D -- SPI
Fast-20

5.3 X3 STUDY GROUPS: None.

OTHER RELATED DOMESTIC STANDARDS EFFORTS:

5.5
ISO/IEC 9316-1 (SCSI-2). SPI, X3.253-199x, is being processed as a NWI at JTC1/SC25/WG4.

OTHER RELATED INTERNATIONAL STANDARDS DEVELOPMENT PROJECTS:

5.7
None.

5.8 RECOMMENDATIONS FOR CLOSE LIAISON: None.