

X3T10/96-151r1

**Project Proposal
For a New
X3 Technical Report**

**SCSI High Availability Profile
(HAP)**

May 9, 1996

1. IDENTIFICATION OF PROPOSED PROJECT

1.1 **TITLE:** SCSI High Availability Profile (HAP).

1.2 **PROPOSER:** X3T10.

1.3 **DATE SUBMITTED:** May 9, 1996

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

2. JUSTIFICATION OF PROPOSED TECHNICAL REPORT

2.1 NEEDS:

Improvements to parallel SCSI have revealed the potential for applications of parallel SCSI to more complex physical configurations having one or more of the following features:

- a) multiple initiators connected to one bus segment
- b) shared access to data stored on devices
- c) devices which perform internal failover procedures on detection of device problems
- d) removal and replacement of device enclosures on active buses
- e) redundant components throughout the storage subsystem

2.2 RECOMMENDED SCOPE OF TECHNICAL REPORT:

Candidates for inclusion in the HAP technical report are:

- a) An interoperability profile for parallel SCSI components
- b) System-level considerations for High Availability subsystems
- c) Clarify the SCC description of the use of multi-LUN devices
- d) Clarify device identification procedures in the case of multiple access paths
- e) Identify characteristics needed for devices intended for use in high availability systems, including hardware, software, microcode, and device models
- f) Document the process and procedures used to remove and replace device and host enclosures on a SCSI bus.
- g) Document the proper usage of "Y" cables, location of bus terminators, etc. as applicable to high availability systems
- h) Document methods to avoid bus glitches on power cycles
- i) Document when a bus reset may be used, when bus options are renegotiated, how to handle incoming bus resets, and the handling of message and command traffic when a host is running its boot or console code
- j) Document when certain data needs to be maintained on a per-LUN or a per-host basis in a device
- k) Establish guidelines for hosts in a multi-host environment to coordinate the use of mode pages, bus IDs, bus resets, and reservations
- l) Clarification of the use of multiple internal controllers inside a SCSI device to provide internal protection against device failure

2.3 EXISTING PRACTICE IN AREA OF PROPOSED TECHNICAL REPORT:

The proposed project involves the creation of a technical report that establishes guidelines for the use of optional SCSI features to be consistent with high availability systems.

2.4 EXPECTED STABILITY OF PROPOSED TECHNICAL REPORT WITH RESPECT TO CURRENT AND POTENTIAL TECHNOLOGICAL ADVANCE:

The nature of the proposed project is to promote and enhance compatibility SCSI implementations from various vendors. 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:

Not applicable.

3.4 RECOMMENDED PROGRAM OF WORK:

The following program of work is planned for the HAP 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 HAP technical report.
- 2) Prepare a draft technical report based on proposals submitted and other information gathered during the initial investigation.
- 3) Consider the results of HAP 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 THE 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 bimonthly. 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 dpANS TO X3: May 1998.

3.9 ESTIMATED USEFUL LIFE OF TECHICAL REPORT:

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

4. IMPLEMENTATION IMPACTS

4.1 IMPACT ON EXISTING USER PRACTICES AND INVESTMENTS:

The proposed HAP technical report will provide guidelines for high availability systems, which should facilitate an evolutionary growth path to the existing practices and investments. It is likely

that any isolated negative impacts would occur in any case through non-coordinated evolution or revolution.

4.2 IMPACT ON SUPPLIER PRODUCTS AND SUPPORT:

Not applicable.

4.3 TECHNIQUES AND COSTS FOR COMPLIANCE VERIFICATION:

Not applicable.

4.4 LEGAL CONSIDERATIONS:

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

5. CLOSELY RELATED STANDARDS ACTIVITIES

5.1 EXISTING STANDARDS:

None.

5.2 X3 STANDARDS DEVELOPMENT PROJECTS:

BSR Number	Title	Project
X3.253-199x	SCSI-3 Parallel Interface	X3T10/0855-D
X3.277-199x	SCSI-3 Fast-20	X3T10/1071-D
X3.270-199x	SCSI-3 Architecture Model	X3T10/0994-D
	SCSI-3 Interlocked Protocol	X3T10/0856-D
	SCSI-3 Primary Commands	X3T10/0995-D
	SCSI Parallel Interface - 2	X3T10/1142-D

5.3 X3 STUDY GROUPS: None.

5.4 OTHER RELATED DOMESTIC STANDARDS EFFORTS: None.

5.5 ISO/IEC JTC 1 STANDARDS DEVELOPMENT PROJECTS: SPI, SIP, Fast-20, SAM, and SPC are being processed as a NWI at JTC1/SC25/WG4..

5.6 OTHER RELATED INTERNATIONAL STANDARDS DEVELOPMENT PROJECTS: None.

5.7 RECOMMENDATIONS FOR COORDINATING LIAISON: None.

5.8 RECOMMENDATIONS FOR CLOSE LIAISON: None.