

**T10/98-137r0**

**Project Proposal  
For a New  
NCITS Standard**

**SCSI Isochronous Serial Bus Protocol  
(ISP)**

**May 7, 1998**

## 1. IDENTIFICATION OF PROPOSED PROJECT

1.1 **TITLE:** SCSI Isochronous Serial Bus Protocol (ISP).

1.2 **PROPOSER:** T10.

1.3 **DATE SUBMITTED:** May 7, 1998

1.4 **PROJECT TYPE:** D - Development of a standard within an NCITS Technical Committee.

## 2. JUSTIFICATION OF PROPOSED STANDARD

### 2.1 NEEDS:

The SCSI Serial Bus Protocol 2 (SBP-2) proposed standard is close to approval as an ANSI standard. This standard covers access protocol and command processing protocols for traditional storage access methodologies using asynchronous packets defined in IEEE 1394-1995 to transfer data. The 1394 Serial Bus is capable of transferring data in an isochronous (time dependent) mode. This mode of operation is useful in a wide variety of applications requiring time dependent data including audio/visual devices and printer device.

This proposed standard is to address isochronous transfer requirements and will be based upon the protocol foundations established by SBP-2.

### 2.2 RECOMMENDED SCOPE OF STANDARD:

The ISP standard will define extensions to the transport layer protocols of Serial Bus Protocol 2 (SBP-2) to add isochronous transfer capabilities.

Candidates for inclusion in the ISP draft standard are:

- a) clarify the SBP-2 paradigm as it relates to isochronous data transfers,
- b) develop functional specifications for isochronous data transmissions,
- c) extend SBP-2 functionality to incorporate to support isochronous streams (coordinated recording or playing of a number of related isochronous channels),
- d) definition of command structures for reading or writing of isochronous data from or to the media,
- e) definition of data formats for the recording and playing of isochronous data and for traditional, asynchronous access of these same files, and
- f) other capabilities which fit within the general application scope of isochronous operations on the Serial Bus that may be proposed during the development phase by the participants in the project.

### 2.3 EXISTING PRACTICE IN AREA OF PROPOSED STANDARD:

Serial Bus Protocol 2 (T10-1155D). Other T10 projects exist that define the transport of the SCSI protocol over different media, for example Fibre Channel and SSA.

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

The nature of the proposed project is to insure that ISP has an upward, highly compatible growth path. This will insure that current investments in ISP are provided with more stability in the face of technological developments.

## 3. DESCRIPTION OF PROPOSED PROJECT:

3.1 **TYPE OF DOCUMENT:** Standard.

3.2 **DEFINITION OF CONCEPTS AND SPECIAL TERMS:** None.

3.3 **EXPECTED RELATIONSHIP WITH APPROVED NCITS REFERENCE MODELS:**

The ISP standard is intended for use in closed systems.

### **3.4 RECOMMENDED PROGRAM OF WORK:**

The following program of work is planned for the ISP:

- a) solicit continuing participation by the current membership of T10 through NCITS procedures. Invite comments and proposals from organizations that may have a contribution to the ISP standard,
- b) establish functional requirements for ISP,
- c) prepare a draft proposed standard based on proposals submitted and other information gathered during the initial investigation,
- d) consider the results of ISP testing as may be available to the committee through the voluntary efforts of the T10 membership, and
- e) submit the draft proposed standard to NCITS for further processing.

### **3.5 RESOURCES - INDIVIDUALS AND ORGANIZATIONS COMPETENT IN THE SUBJECT MATTER:**

The current membership of T10 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 T10 have expressed their desire to participate and cooperate in the development of this proposed standard.

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

High Performance Serial Bus has been adopted for use outside of the computer industry. T10 could benefit from contact with other groups that embody High Performance Serial Bus expertise. The 1394 Trade Association, which meets four times a year, is representative of the High Performance Serial Bus community and is an appropriate point of contact.

### **3.6 RECOMMENDED NCITS DEVELOPMENT TECHNICAL COMMITTEE:**

It is recommended that the development work be done in Technical Committee T10 which is responsible for developing the family of SCSI standards.

### **3.7 ANTICIPATED FREQUENCY AND DURATION OF MEETINGS:**

Technical Committee T10 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 NCITS: July, 1999.**

### **3.9 ESTIMATED USEFUL LIFE OF STANDARD:**

It is anticipated that this standard will have a life of five (5) years.

## **4. IMPLEMENTATION IMPACTS**

### **4.1 IMPACT ON EXISTING USER PRACTICES AND INVESTMENTS:**

The proposed ISP standard 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 through non-standard evolution or revolution.

### **4.2 IMPACT ON SUPPLIER PRODUCTS AND SUPPORT:**

The proposed ISP standard 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 through non-standard evolution or revolution.

**4.3 TECHNIQUES AND COSTS FOR COMPLIANCE VERIFICATION:**

The committee will consider the results of ISP testing as may be available to the committee through the voluntary efforts of the various participants in T10. With this method all costs are borne by the organizations of the various participants and have for the most part been mainly an adjunct of their normal development costs.

**4.4 LEGAL CONSIDERATIONS:**

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

**5. CLOSELY RELATED STANDARDS ACTIVITIES****5.1 EXISTING NCITS STANDARDS:** None.**5.2 NCITS STANDARDS DEVELOPMENT PROJECTS:**

BSR Number	Title	Project
X3.270-199x	SCSI-3 Architecture Model	994D
NCITS.xxx-199x	SCSI Serial Bus Protocol 2	1155D

**5.3 NCITS STUDY GROUPS:** None.**5.4 OTHER RELATED DOMESTIC STANDARDS EFFORTS:** IEEE P1394 / P1394A/P1394B/P1394.1.**5.5 ISO/IEC JTC 1 STANDARDS DEVELOPMENT PROJECTS:**

CD 9316-8	SCSI-3 Architecture Model
CD 9316-7	SCSI-3 Serial Bus Protocol

It is anticipated that ISP will be proposed to JTC1/SC25/WG4.

**5.6 OTHER RELATED INTERNATIONAL STANDARDS DEVELOPMENT PROJECTS:**

“Digital Interface for Consumer Audio/Video Equipment”, IEC 61883.

**5.7 RECOMMENDATIONS FOR COORDINATING LIAISON:** None.**5.8 RECOMMENDATIONS FOR CLOSE LIAISON:**

Continue liaison with the IEEE Microprocessor Committee responsible for High Performance Serial Bus.