1.   Identification of Proposed Project

1.1   Title: SCSI-3 Architecture Model (SAM)

1.2   Proposer

This project is proposed by the X3T9 Technical Committee. For additional information, please contact John B. Lohmeyer, X3T9.2 Chairman, at NCR Corporation, 1635 Aeroplaza Dr, Colorado Springs,CO 80916, (Phone: 719-596-5795 FAX: 719-597-8225) or Dal Allan, X3T9.2 Vice-Chairman at ENDL, 14426 Black Walnut Ct, Saratoga, CA 95070 (Phone: 408-867-6630 Fax: 408-867-2115).

1.3   Date Submitted: June 1992

1.4   Project Type: Development

2.   Justification of Proposed Standard or Technical Report

2.1   Needs

SCSI-3 has been divided into multiple standards projects to provide timely completion of these standards. This structure permits a mix-and-match approach to implementing SCSI. One standard, the SCSI-3 Architecture Model, is needed to define a unifying architecture. This standard is also required because the various SCSI command sets are being ported to several transport protocols.

2.2   Recommended Scope of Standard or Technical Report

The SCSI-3 Architecture Model defines the architecture of SCSI and provides a model for implementing several protocols on a variety of transport mechanisms. This standard will define a unifying framework for the implementation of SCSI.

Functions which will be considered for incorporation include:

a)   Principles of SCSI operation (e.g., I/O process queuing).

b)   Command, data, and status processing.

c)   Low-level control functions which are performed with signals and messages in SCSI-2 and SCSI-3 Parallel Interface and may be performed by other means on the new transport mechanisms.

d)   Provide a conceptual model of the how the SCSI family of standards relate to each other.

e)   Other capabilities which fit within the scope of the SCSI-3 Architecture Model that may be proposed during the development phase by the participants in the project.

2.3   Existing Practice in Area of Proposed Standard or Technical Report

Other efforts exist within X3T9.2 to broaden the application of SCSI (see 5.2).

2.4   Expected Stability of Proposed Standard or Technical Report with Respect to Current and Potential Technological Advance

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The nature of the proposed project is to define an architectural model in a manner which provides a high degree of compatibility among the alternatives available to host system manufacturers and peripheral suppliers.

3.   Description of Proposed Project

3.1   Type of Document (Standard or Technical Report):   Standard

3.2   Definition of Concepts and Special Terms (if any):   none

3.3   Expected Relationship with Approved X3 Reference Models (e.g., DBMS, OSI)

The SCSI-3 Architecture Model is for use in closed systems.

3.4   Recommended Program of Work

The following program of work is planned for the SCSI-3 Architecture Model standard:

-        Solicit participation from present and future SCSI participants through X3T9.2 procedures and through press releases. Invite comments by end-user organizations and invite proposals from organizations that may have a contribution to a viable SCSI-3 Architecture Model standard.
-        Establish functional requirements for SCSI-3 Architecture Model functional additions.
-        Prepare a draft standard based on proposals submitted and other information gathered during the initial investigation.
-        Consider the results of SCSI-3 Architecture Model testing as may be available to the committee through the voluntary efforts of the various participants in X3T9 and its assigned task group.
-        Submit the draft proposed standard to X3 for further processing.

3.5   Resources - Individuals and Organizations Competent in Subject Matter

The current membership of X3T9.2 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 X3T9.2 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 standards.

3.6   Recommended X3 Development Technical Committees (Existing or New)

It is recommended that the development work be done in task group X3T9.2.

3.7   Anticipated Frequency and Duration of Meetings

Task group X3T9.2 meets bi-monthly. Specific task ad hoc groups are called as may be required between X3T9.2 plenary meetings, but their results are not binding.

3.8   Target Date for dpANS to X3 (Milestone 10):   February 1994

3.9   Estimated Useful Life of Standard or Technical Report

It is anticipated that this standard will have a life of over 10 years.

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4.   Implementation Impacts

4.1   Impact on Existing User Practices and Investments

The proposed SCSI-3 Architecture Model standard will provide an upward growth path which complements 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 SCSI-3 Architecture Model standard will provide an upward growth path which complements 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 SCSI-3 Architecture Model testing as may be available to the committee through the voluntary efforts of the various participants in X3T9 and its assigned task group. 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

No new legal considerations are expected that are not already in accordance with accepted X3 patent policies.
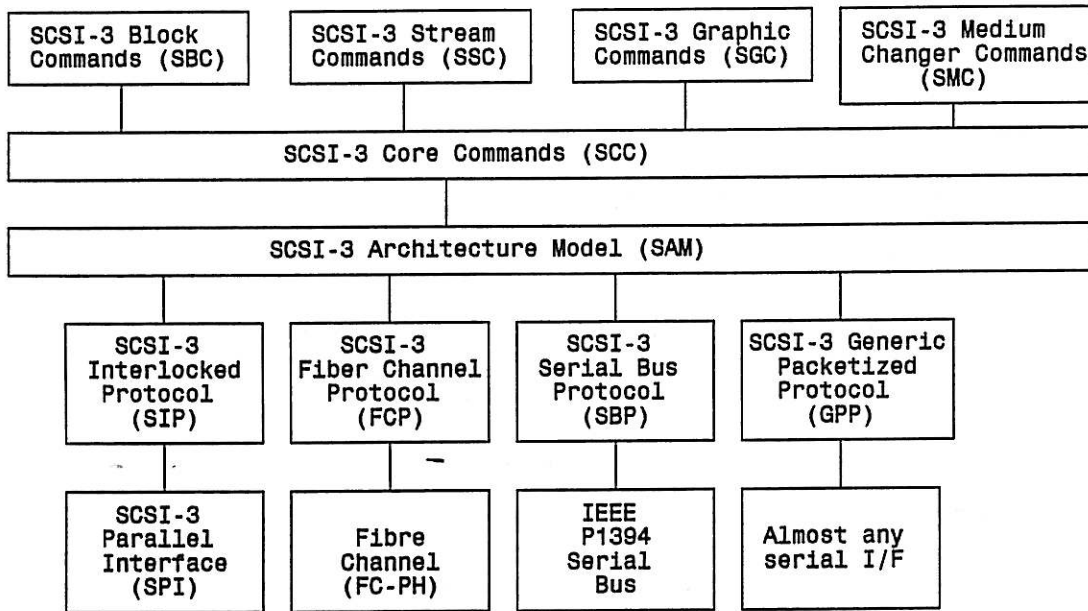
5.   Closely Related Standards Activities

This standard extends and enhances the SCSI-2 (X3.131-199x) and is a member of the SCSI-3 family of standards (see 5.2, below).

5.1   Existing Standards: none

5.2   X3 Standards Development Projects

The SCSI-3 Architecture Model is one part of the overall SCSI-3 family of standards:

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┌──────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────┐
│ SCSI-3 Block │  │ SCSI-3 Stream│  │ SCSI-3 Graphic│ │ SCSI-3 Medium│
│Commands (SBC)│  │Commands (SSC)│  │Commands (SGC)│  │Changer Commands│
│              │  │              │  │              │  │    (SMC)     │
└──────┬───────┘  └──────┬───────┘  └──────┬───────┘  └──────┬───────┘
       │                 │                 │                 │
┌──────┴─────────────────┴─────────────────┴─────────────────┴───────┐
│                  SCSI-3 Core Commands (SCC)                         │
└────────────────────────────────┬───────────────────────────────────┘
                                  │
┌─────────────────────────────────────────────────────────────────────┐
│                  SCSI-3 Architecture Model (SAM)                      │
└──────┬─────────────────┬─────────────────┬─────────────────┬─────────┘
       │                 │                 │                 │
┌──────┴───────┐  ┌──────┴───────┐  ┌──────┴───────┐  ┌──────┴───────┐
│   SCSI-3     │  │   SCSI-3     │  │   SCSI-3     │  │SCSI-3 Generic│
│ Interlocked  │  │Fiber Channel │  │ Serial Bus   │  │  Packetized  │
│  Protocol    │  │  Protocol    │  │  Protocol    │  │  Protocol    │
│   (SIP)      │  │   (FCP)      │  │   (SBP)      │  │   (GPP)      │
└──────┬───────┘  └──────┬───────┘  └──────┬───────┘  └──────┬───────┘
       │                 │                 │                 │
┌──────┴───────┐  ┌──────┴───────┐  ┌──────┴───────┐  ┌──────┴───────┐
│   SCSI-3     │  │              │  │    IEEE      │  │              │
│  Parallel    │  │   Fibre      │  │   P1394      │  │ Almost any   │
│  Interface   │  │  Channel     │  │   Serial     │  │  serial I/F  │
│   (SPI)      │  │  (FC-PH)     │  │    Bus       │  │              │
└──────────────┘  └──────────────┘  └──────────────┘  └──────────────┘
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SAM

5.3   X3/SPARC Study Groups: none

5.4   Other Related Domestic Standards Efforts: none

5.5   ISO Standards Development Projects

It is anticipated that this standard will be proposed to 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

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