

Project Proposal For A New INCITS Standard
Fabric Application Interface Standard
(FAIS)

1 Source of the Proposed Project

1.1 Title

Fabric Application Interface Standard (FAIS)

1.2 Date

June 5, 2003

1.3 Proposer

INCITS TC T11, with a current membership of 60.

2 Process Description for Proposed Project

2.1 Project Type (Development or Revision)

Type D (Development of an ANSI standard within INCITS T11)

2.2 Type of Document

Standard

2.3 Definition of Concepts and Special Terms

None

2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.

All Fibre Channel standards are intended for use in closed systems.
This technology is applicable to any Storage Network environment.

2.5 Recommended INCITS Development Technical Committee (Existing or New)

It is recommended that this project be assigned to TC T11,
in order that the project be coordinated with work
on other Fibre Channel and Storage Networking standards.

2.6 Anticipated Frequency and Duration of Meetings

This project will make use of the regularly
scheduled bimonthly T11 plenary meetings.
Informal Working Groups will be organized on an
ad-hoc basis.

2.7 Target Date for Initial Public Review (Milestone 4)

June 2004

2.8 Estimated Useful Life of Standard or Technical Report

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

3 Business Case for Developing the Proposed Standard or Technical Report

3.1 Description

The FAIS will define a common application programming interface (API) framework for implementing storage applications in a storage networking environment.

The FAIS should include such items as:

a) An API that provides for the separation of control and data paths in a storage environment where:

1) The control path supports the handling of SCSI storage and storage management command sets as both Initiator and Target. Support for multiple SCSI protocols (as per SAM-3) is expected.

2) The data path provides appropriate abstractions for common SCSI operations including SBC & SSC Read and Write. The abstraction will hide the underlying mechanisms for data path manipulations.

3) Methods of discovering and configuring the data path capabilities are provided

4) Methods of routing exceptions from the data path to the control path are provided.

b) Models that demonstrate how the FAIS can be applied to implementing storage applications in a storage networking environment. Such models should describe the functions that a storage application may use, including:

1) identification and initialization of real and virtual storage resources.

2) establishment of parameters and mappings that control SCSI storage operation.

3) execution of supporting SCSI commands on behalf of a virtual storage device.

4) execution of data distribution functions, data replication functions, and data journaling functions appropriate to a storage application.

5) other storage application functions.

c) Details of the API in a), including parameter definitions and formats appropriate to implement storage applications. A profile will be provided for a C-based implementation of the API for storage applications running in a Fibre Channel environment. Additional profiles and language bindings may also be provided.

d) A consistent architecture for vendor specific extensions.

e) An informative annex which describes the impact of storage applications using this API on existing Fabric Service definitions.

f) Additional material as required to clarify, complete, and complement the above items.

3.2 Existing Practice and the Need for a Standard

At present, the Fibre Channel family of standards includes clear definitions of link protocols, mapping of device functions onto link protocols, and switch and fabric initialization, management, and services.

Current trends in Storage Networking encourage the implementation of storage applications in the storage network. At present there is no standard application programming interface for this purpose.

The FAIS provides such an interface, allowing improved portability and architectural flexibility in the implementation of storage applications. Storage applications using this interface should be easily ported to different operating systems and platforms. The interface should be designed to allow flexible distribution of storage application functionality among different components of a storage network.

3.3 Implementation Impacts of the Proposed Standard

3.3.1 Development Costs

This standard will be developed through the voluntary and cooperative efforts of T11 Task Committee members. No significant development costs are anticipated.

3.3.2 Impact on Existing or Potential Markets

The proposed standard will provide a common framework for service extensions that complement and enhance existing supplier products and support schemes and protects backward compatibility. The proposed standard will result in expanded applications for existing and conceived products in both the channel and network markets. It is possible that isolated adverse effects may occur through extensions of services into areas that may have non-standard implementations at present.

3.3.3 Costs and Methods for Conformity Assessment

The committee will consider the results of testing provided to the committee through the voluntary efforts of the participants in T11. 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.

3.3.4 Return on Investment

The return on investment for this development is expected to be high, due to the commonality of effort directed to a singular method of providing the services covered by the proposed standard. The standard is expected to significantly enhance the market presence of Fibre Channel and other Storage Network architectures.

3.4 Legal Considerations

3.4.1 Patent Assertions

Calls will be made to identify assertions of patent rights in accordance with the relevant INCITS, ANSI and ISO/IEC policies and procedures. T11 is aware that some patent assertions may be made. All currently-identified

patent assertions are from organizations that have filed formal letters with ANSI committing to license any patents required for the implementation of all T11 standards in accordance with the relevant INCITS, ANSI, and ISO/IEC policies and procedures.

3.4.2 Dissemination of the Standard or Technical Report

Drafts of this document will be disseminated electronically. Dissemination of the final standard will be restricted as the document becomes the property of INCITS, ANSI, or ISO/IEC.

4 Related Standards Activities

4.1 Existing Standards

None

4.2 Related Standards Activity

The development of the FAIS definitions will build on the work in any related standards and will be guided, as appropriate, by standards outside the suite of Fibre Channel standards.

4.3 Recommendations for Coordinating Liaison

None

4.4 Recommendations for Close Liaison

None

5 Units of Measurement used in the Standard

The units of measurement used in the standard shall be the International System of Units (SI).