Project Proposal For An Amendment To An INCITS Standard
Fibre Channel - Single-Byte Command Code Sets-3
Mapping Protocol / Ammendment 1

(FC-SB-3/AM1)

T11/06-676v1

1 Source of the Proposed Project

1.1 Title

Fibre Channel - Single-Byte Command Code Sets-3 Mapping Protocol / Amendment 1

(FC-SB-3/AM1)

1.2 Date

3 October 2006.

1.3 Proposer(s)

INCITS TC T11, with a current membership of 52.

2 Process Description for Proposed Project

2.1 Project Type (Development or Revision)

Type D (Development done within INCITS TC T11).

2.2 Type of Document

Amendment.

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 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)

April 2007.

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

INCITS 374-2003, Single-Byte Command Sets-3 (FC-SB-3), defines an IU pacing protocol that controls the number of IUs that can be in flight from a channel to a control unit. The control unit is enabled to increase the pacing count (the number of IUs allowed to be in flight from channel to control unit) in the first Command Response IU sent to the channel. The increased pacing count is valid only for the remainder of the current outbound exchange. In certain applications, at higher link speeds, and at long distances, a performance benefit is obtained by the increase in the allowed pacing count.

The IU pacing protocol, as defined, has the limitation that the first burst of IUs from the channel to the control unit may be no larger than a default value of 16. This causes a delay in the execution of channel programs with more than 16 commands at long distances because a round trip to the control unit is required before the remainder of the IUs can be sent by the channel, upon the receipt of the first command response, as allowed by the increased pacing count.

The current standard contains a note recommending a default value of 32 for a 2G channel, yet it provides no method for changing the default value. A recommended value for 4G and higher link speeds is not provided.

The goals of this FC-SB-3 Ammendment are:

a) Provide a method for modification of the Default IU Pacing Count to support recommended default values with higher Fibre Channel Link speeds in order to provide improvements in performance.

b) Maintain backward compatibility with the current FC-SB-3 standard rules for IU pacing.

c) Add recommended default pacing values for 4G and higher link speeds.

d) Make any additional technical additions or corrections required by the committee to support the proposed changes.

3.2 Existing Practice and the Need for a Standard

Current Standard does not allow for needed increases in default IU Pacing. The standard needs to be updated to support greater default pacing counts for higher link speeds to meet performance requirements.

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 an upward growth path that complements and enhances existing supplier products and support schemes and protects backward compatibility wherever possible. The proposed standard will result in expanded applications for existing and conceived products in both the channel and network markets. It is likely that isolated adverse effects would occur in any case through non-standard evolution or revolution.

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.

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.

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 and Technical Reports

INCITS 374:2003, Fibre Channel Single - Byte Command Sets-3 (FC-SB-3)

INCITS 373:2003, Fibre Channel FRAMING AND SIGNALING (FC-FS)

INCITS 404:2005, Fibre Channel PHYSICAL INTERFACES (FC-PI-2)

4.2 Standards Under Development

Project 1619-D, Fibre Channel Framing and Signal Interface -2 (FC-FS-2)

Project 1647-D, Fibre Channel Physical Interface - 4 (FC-PI-4)

4.3 Recommendations for Close Liaison

None.

5 Units of Measurement used in the Standard

Système Internationale d'Unités (International System of Units).