

Project Proposal For A New INCITS Standard Fibre Channel – Backbone - 6

(FC-BB-6)

T11/09-272v1

1 Source of the Proposed Project

1.1 Title

Fibre Channel – Backbone - 6 (FC-BB-6).

1.2 Date

4 June 2009.

1.3 Proposer(s)

INCITS TC T11, with a current voting membership of 37.

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

Standard.

2.3 Definition of Concepts and Special Terms

Backbone: A network, and its associated resources and services, used to connect one or more Fibre Channel entities over non-Fibre Channel protocol infrastructures. These Fibre Channel entities may be connected over varying geographical distances or locally.

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 2011.

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 FC-BB-5 standard defined a direct mapping of Fibre Channel over Ethernet, called FCoE. The FCoE mapping allows Fibre Channel to be used in Ethernet based I/O consolidated environments and is especially useful in Data Center environments. This project proposal recommends the development of a set of additional and enhanced mechanisms, services, and protocols to enrich the FCoE mapping.

Included within the scope of this project are functions such as:

- a) Support for VN_Port to VN_Port virtual links;
- b) Investigate improvements in support for high BER Ethernet transmission media (e.g., 10GBASE-T); and
- c) Any other item as deemed necessary during the development.

3.2 Existing Practice and the Need for a Standard

The Fibre Channel Backbone standards (i.e., FC-BB, FC-BB-2, FC-BB-3, FC-BB-4, and FC-BB-5) describe how Fibre Channel may be carried over non-Fibre Channel protocol infrastructures, such as ATM, SONET, TCP/IP, GFPT, and Ethernet. In particular, the FC-BB-5 standard defines a direct mapping of Fibre Channel over Ethernet, called FCoE. This mapping allows Fibre Channel to be used in Ethernet based I/O consolidated environments, providing a significant business advantage to Fibre Channel over competing technologies.

There is a need to investigate improvements in supporting special FCoE configurations. In particular, there is the opportunity to enhance the operation of FCoE to support VN_Port to VN_Port virtual links and to support certain copper-based Ethernet transmission media, such as 10GBASE-T. The new standard may address performance, enhancements, and management functions associated with these additional configurations.

3.2.1 Development Costs

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

3.2.2 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. The proposed standard will result in expanded applications for existing and conceived products in both the channel and network markets.

3.2.3 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.

3.2.4 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.

3.3 Legal Considerations

3.3.1 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 of patent assertions that have been made and letters indicating compliance with INCITS policies have been received.

3.3.2 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

ANSI INCITS 418-2006, *Fibre Channel – Switch Fabric - 4 (FC-SW-4)*

ANSI INCITS 424-2007, *Fibre Channel – Framing and Signaling - 2 (FC-FS-2)*

ANSI INCITS 426-2007, *Fibre Channel – Security Protocols (FC-SP)*

ANSI INCITS 433-2007, *Fibre Channel – Link Services (FC-LS)*

IEEE Std 802.3-2008, *Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications*

IEEE Std 802.1Q-2005, *Virtual Bridged Local Area Networks*

4.2 Standards Under Development

Project 1822-D, *Fibre Channel – Switch Fabric - 5 (FC-SW-5)*

Project 1861-D, *Fibre Channel – Framing and Signaling - 3 (FC-FS-3)*

Project 1871-D, *Fibre Channel – Backbone - 5 (FC-BB-5)*

Project 2103-D, *Fibre Channel – Link Services - 2 (FC-LS-2)*

IEEE 802.1Qau, *Virtual Bridged Local Area Networks – Amendment 7: Congestion Notification*

IEEE 802.1Qaz, *Virtual Bridged Local Area Networks – Amendment XX: Enhanced Transmission Selection for Bandwidth Sharing Between Traffic Classes*

IEEE 802.1Qbb: *Virtual Bridged Local Area Networks – Amendment XX: Priority-based Flow Control*

4.3 Recommendations for Close Liaison

IEEE DCB, IETF Trill.

5 Units of Measurement used in the Standard

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