

**Project Proposal For A New INCITS Standard
Fibre Channel Base-T**

(FCBase-T)

T11/05-183v2

1 Source of the Proposed Project

1.1 Title

Fibre Channel Base-T (FCBase-T).

1.2 Date

11 August 2005.

1.3 Proposer(s)

INCITS TC T11, with a current membership of 54.

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

None.

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

All Fibre Channel standards are intended for use in closed systems.

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)

June 2006.

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

This project proposal recommends the development of a new physical level usable by the FC protocol transport level and the command sets above it. This new physical level should leverage the RJ45 connectors and the Category 5e cabling defined in ISO/IEC 11801:2002, the same cabling standard referenced by the IEEE Std 802.3-2005 (Ethernet). This new physical level may also leverage the Category 6 and 6a cabling defined in ANSI/TIA/EIA-568-B.2-1-2002 and ANSI/TIA/EIA-568-B.2-10. This new physical level should maintain a high degree of compatibility with the requirements specified in the current FC-PI and FC-PI-2 standards, with the requirements specified in the current Ethernet standards (such as meet CISPR/FCC Class A regulations) and with existing RJ45 environments. Included within the scope of this project are the following items:

- a) Definition of FC operations for the 1Gb/s and 2Gb/s speeds over Category 5e and 6 cabling;
- b) Definition of FC operations for the 4Gb/s speed over Category 5e, 6 and 6a cabling;
- c) Definition of FC operations for additional FC speeds over Category 6 or 6a cabling, as deemed necessary.

3.2 Existing Practice and the Need for a Standard

Today deployments of Fibre Channel Fabrics are usually based on optical cabling for external connectivity (i.e., for connectivity outside a storage enclosure). However optical components are perceived expensive by several customers. To improve the Fibre Channel competitiveness in low cost environments a new physical level that enable Fibre Channel to leverage and use the existing Category 5e and 6 copper cabling technology is required. A standard is needed to define this new physical level.

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

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. T11 is aware of patent assertions that have been made and letters indicating compliance with INCITS policies have been received.

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

IEEE Std 802.3-2005, *Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications*

ISO/IEC 11801:2002, *Information technology -- Generic cabling for customer premises*

ANSI/TIA/EIA-568-B.2-1-2002, *Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling*

ANSI/TIA/EIA-568-B.2-10, *Transmission Performance Specifications for 4-Pair 100 Ohm Augmented Category 6 Cabling*

ANSI INCITS 352-2002, *Fibre Channel Physical Interfaces (FC-PI)*

ANSI INCITS 404-2005, *Fibre Channel Physical Interfaces - 2 (FC-PI-2)*

4.2 Related Standards Activity

Project 1625-D, *Fibre Channel - Physical Interfaces - 3 (FC-PI-3)*

Project 1647-D, *Fibre Channel - Link Equalization Enhanced Variants (FC-PI-4)*

4.3 Recommendations for Close Liaison

IEEE P802.3an (10GBASE-T).

5 Units of Measurement used in the Standard

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