

Proposal for a New T11.2 Project
INCITS Standard
Fibre Channel – Link Equalization Enhanced Variants
(FC-PI-4)

1 Source of the Proposed Project

1.1 Title: Fibre Channel – Link Equalization Enhanced Variants (FC-PI-4)

1.2 Date Submitted:

August 13, 2003

1.3 Proposer:

T11.2

2 Process description for the Proposed Project:

2.1 Project Type:

Type D (Development done within INCITS T11.2)

2.2 Type of Document:

INCITS Standard

2.3 Definitions of Terms:

None

2.4 Expected Relationships with Reference Models, Frameworks, Architecture:

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

2.5 Recommended INCITS Development Technical Committee:

It is recommended that this project be assigned to TG T11.2. It is expected that this project will impose no new requirements on other Fibre Channel groups or standards.

2.6 Anticipated Frequency and Duration of Meetings:

This project will make use of the regularly-scheduled bimonthly T11.2 plenary meetings. Informal Working Groups will be organized on an ad-hoc basis.

2.7 Target Date for Initial Public Review (Milestone 4):

October 2004

2.8 Estimated Useful Life of Standard or Standard:

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

3 Business Case for Developing the Proposed:

3.1 Proposed content

The FC-PI-4 standard will define the requirements for extending the transmission distances (and/or maintaining existing distances at higher data rates) in existing and new physical layer variants and will support longer distance operation over legacy fiber and electrical cables.

The FC-PI-4 document will take in account all aspects of transmit, receive and cable-plant equalization for fiber as well as electrical and will define a set of requirements to assure maximum interoperability between different manufacturers of transmitters and receivers using link equalization.

One goal is to develop a new variant that runs 4.25 GBaud with link equalization over the same cable plants as specified for the 2.125 GBaud without link equalization.

New variants defined in this standard may interoperate with legacy variants defined in the FC-PI, FC-PI-2, FC-PI-3 and 10GFC standards but are not required to do so.

Additional sub-projects may be proposed within the scope of this project. Each will include appropriate specifications, including penalties and jitter, and methodologies required to measure the signal parameters.

This proposed standard is not intended to address areas above the physical level (such as protocol and command sets).

3.2 Existing Practice and the Need for a Standard:

The proposed project involves a compatible evolution of the present Fibre Channel physical layer. Market and application space:

- Increase (or maintain at higher data rates) the distances of optical and electrical links in:
 - Backplanes
 - Horizontal and vertical wiring
 - Inter- and intra-building connections
 - Server room channels
- Enable the reuse of legacy optical and electrical cable plants
- Link equalization will enable the use of lower cost technologies.

3.3 Implementation Impacts of the Proposed Standard

3.3.1 Development Costs

Resources are provided by the members of T11.2. The members host the required meetings for development, provide for the necessary lab experiments and silicon technology development and provide the Technical Editor for the project.

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 backplane, channel and network markets.

3.3.3 Costs and Methods for Conformity Assessment

The committee will consider the results of testing as may be available to the committee through the voluntary efforts of the various participants in T11.2. 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. Additionally, the investment made in products developed under FC-EDC will be preserved by providing additional distance or margin to existing physical variants

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. T11.2 is not aware of any patent assertions that may be made.

3.4.2 Dissemination of the Standard or Standard

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

4 Related Standards Activities:

4.1 Existing Standards

BSR Number Title Project

4.2 Related Standards Activity:

- NCITS 352:2002 Fibre Channel - Physical Interface (FC-PI)
- Project 1413-D, Fibre Channel - 10 Gigabit (10GFC)
- Project 1316-DT, Methodology for Jitter and Signal Quality Specification (FC-MJSQ)
- SFF Committee document INF-8077i, XFP Specification, Revision 3.0, 10 Gigabit Small Form Factor Pluggable Module

4.3 Recommendations for Coordinating Liaison:

None

4.4 Recommendations for Close Liaison:

IEEE 802.3

5 Units of Measurement used in the Standard:

Indicate units of measurement used in the Standard:

International Systems of Units (SI)

Inch/Pound

Both

Other

Not Measurement Sensitive