

# Project Proposal For A New INCITS Standard Fibre Channel Generic Services Sixth Generation

## (FC-GS-6)

T11/06-104v2

### 1 Source of the Proposed Project

#### 1.1 Title

Fibre Channel Generic Services-6 (FC-GS-6)

#### 1.2 Date

06 February 2006

#### 1.3 Proposer(s)

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 done 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.

#### 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 to discuss specific subjects where appropriate.

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

April 2008

## 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 set of additional and enhanced services that will be used to support the management and control of Fibre Channel configurations.

Included within this scope are services such as:

- a) Second Generation Fabric Device Management Interface,
- b) Scalability improvement features,
- c) Improved support for virtualization services specified in other Fibre Channel standards,
- d) Name Server Scope support enhancements,
- e) Security Support features,
- f) Additional Time Services,
- g) Diagnostic Server or Error Isolation features,
- h) Interfabric Routing support features,
- i) Other services or features identified during the development of this standard.

Where they exist, the protocols, formats and definitions contained in existing directory and management standards will be considered for use in FC-GS-6.

### 3.2 Existing Practice and the Need for a Standard

Development of the first generation Fibre Channel Generic Services (FC-GS) draft began in 1994. The FC-GS project addressed the basic Fibre Channel services required to provide the control and management of Fibre Channel environments. The basic Fibre Channel services defined in FC-GS include a Directory Service, a Common Service Transport, a Time Service and Native SNMP Mappings. The FC-GS Standard was eventually published in 1997.

Development of the second generation Fibre Channel Generic Services (FC-GS-2) draft began in mid-1995. The FC-GS-2 project addressed additional services and extensions to FC-GS to increase the management and control capabilities of Fibre Channel configurations. The FC-GS-2 Standard was published in 1998. With the publication of that standard, Fibre Channel vendors supplied customers with the infrastructure to exploit the capabilities defined in FC-GS-2.

As deployment of Fibre Channel Storage Area Networks grew, SAN management functionality needs increased. The growth in the number of SAN's was also accompanied with an increase in the number of components within each Storage Area Network. Additional services were identified to aid in the management of these SAN's. In 1998, ANSI Working Groups began work on FC-GS-3. The group was chartered with identifying and standardizing techniques for topology discovery, zoning and security, in addition to other service enhancements. The FC-GS-3 Standard was published in 2000. Starting in 2000, the FC-GS-4 project added clarifications to CT Authentication, a new performance server, a fabric device management interface, enhanced zoning management, and obsoleted a key server. The FC-GS-4 draft was completed in December 2003.

The FC-GS-5 project added trace route, additional event, CT confidentiality security, and additional fabric configuration server improved scalability features. FC-GS-5 also made various error reporting clarifications and obsoleted asynchronous mode. SAN Management Applications, which have integrated the enhanced services developed in FC-GS-5, are being deployed within customer environments.

| IT administration staff have requested that new services be developed to further enrich SAN management applications. For example, SAN Management application vendors are requesting improved support for virtualization services specified in other standards which will assist in managing the Fibre Channel components, additional security support, and enhancements to the fabric device management interface exposing device operational characteristics. As the use of SAN Management applications grow, further service may be identified that are within the scope of this development activity and thus will be addressed in this new standard. A FC-GS-6 standard will become the foundation for further exploiting the Fibre Channel Management capabilities being provided by SAN hardware and software vendors.

### **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. 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. Additionally, the investment made in products developed under FC-GS-6 will be preserved by providing services within the existing infrastructure.

### **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 any patent assertions that may be made.

#### **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**

- (1) INCITS 373:2003 Fibre Channel - Framing and Signaling (FC-FS)
- (2) INCITS 332:1999, Fibre Channel Arbitrated Loop (FC-AL-2).
- (3) INCITS 416:2006, Fibre Channel Protocol for SCSI - 3 (FCP-3).
- (4) INCITS 387:2004, Fibre Channel Generic Services - 4 (FC-GS-4).
- (5) INCITS 418:200x, Fibre Channel Switch Fabric - 4 (FC-SW-4).
- (6) INCITS 374:2003, Fibre Channel Single-Byte Command Sets Mapping Protocol - 3 (FC-SB-3).
- (7) INCITS 414:2006, Fibre Channel - Backbone (FC-BB-3).
- (8) INCITS TR:36:2004, Fibre Channel - Device Attach (FC-DA)
- (9) INCITS TR:39:2005, Fibre Channel Methodologies for Interconnects - 2 (FC-MI-2).
- (10) INCITS 386:2004, Fibre Channel - HBA API (FC-HBA)

### **4.2 Related Standards Activity**

- (1) Project 1570-D, Fibre Channel Security Protocols (FC-SP).
- (2) Project 1822-D, Fibre Channel Switch Fabric - 5 (FC-SW-5).
- (3) Project 1619-D, Fibre Channel Framing and Signaling - 2 (FC-FS-2).
- (4) Project 1620-D, Fibre Channel Link Services (FC-LS).
- (5) Contribution Project, IPv6, IPv4, and ARP over Fibre Channel (IPv4FC).
- (6) Contribution Project, Storage Management - Zone Server MIB (SM-ZSM).
- (7) Project 1745-D, Fibre Channel - Inter-Fabric Routing (FC-IFR)
- (8) Project 1237-D, Fibre Channel - Audio Visual (FC-AV)
- (9) Project 1332-D, Fibre Channel - Virtual Interface (FC-VI)
- (10) Project 1640-D, Fibre Channel - Fabric Application Interface Standard (FAIS)
- (11) Project 1695-D, Host Bus Adapter Application Programming Interface (SM-HBA)
- (12) Project 1796-D, Fibre Channel - Backbone (FC-BB-4).
- (13) Project 1677-D, Fibre Channel - Generic Services - 5 (FC-GS-5).

### **4.3 Recommendations for Close Liaison**

IETF - IP Storage Working Group

SNIA - Fibre Channel Technical Work Group

## **5 Units of Measurement used in the Standard**

Systeme Internationale d'Unites (International System of Units).