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INFORMATION TECHNOLOGY – FIBRE CHANNEL – Part 243: Fibre channel backbone-3 (FC-BB-3)

FOREWORD

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International Standard ISO/IEC 14165-243 was prepared by subcommittee 25: Interconnection of information technology equipment, of ISO/IEC joint technical committee 1: Information technology.

A list of all currently available parts of the ISO/IEC 14165 series, under the general title *Information technology – Fibre channel,* can be found on the IEC web site.

This International Standard has been approved by vote of the member bodies and the voting results may be obtained from the address given on the second title page.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

INTRODUCTION

This International Standard specifies mechanisms that allow extension of Fibre Channel links and/or switched networks across Wide Area Networks. FC-BB-3 defines four distinct Fibre Channel backbone mappings: FC over ATM, FC over SONET, FC over TCP/IP, and FC over GFPT.

INFORMATION TECHNOLOGY – FIBRE CHANNEL – Part 243: Fibre channel backbone-3 (FC-BB-3)

1 Scope

This part of ISO/IEC 14165-243 consists of four distinct Fibre Channel mappings resulting in the following four models:

– FC-BB-3_ATM (FC over ATM backbone network)

– FC-BB-3_SONET (FC over SONET backbone network)

– FC-BB-3_IP (FC over TCP/IP backbone network)

– FC-BB-3_GFPT (FC over SONET/SDH/OTN/PDH backbone network using GFPT adaptation)

Figure 1, figure 2, and figure 3 illustrate the scope and the major components of the FC-BB-3 models and its relationship to the FCIP standard and the ATM Forum/ITU-T standards. Table 1 shows the organization of this standard. FC-BB-3_IP, FC-BB-3_ATM, FC-BB-3_SONET, and FC-BB-3_GFPT do not interoperate in any way and are independent models.

Table 1 – FC-BB-3 Organization

Model type	Applicable Clauses and Annexes
FC-BB-3_ATM, FC-BB-3_SONET, FC-BB-3_IP, FC-BB-3_GFPT	1-4
FC-BB-3_ATM, FC-BB-3_SONET	5, 6
FC-BB-3_ATM	7, Annexes A, B, C
FC-BB-3_SONET	8, Annexes A, C
FC-BB-3_IP	9, Annex A
FC-BB-3_GFPT	10

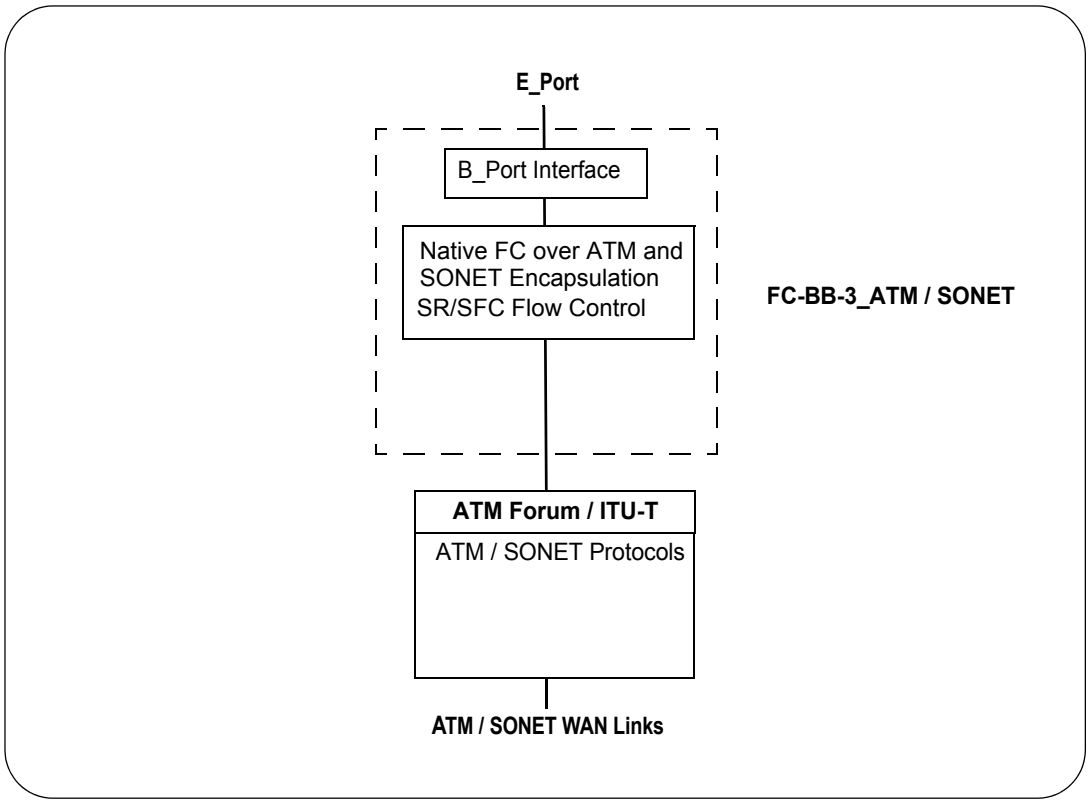

Figure 1 – Scope and components of FC-BB-3_ATM/SONET models

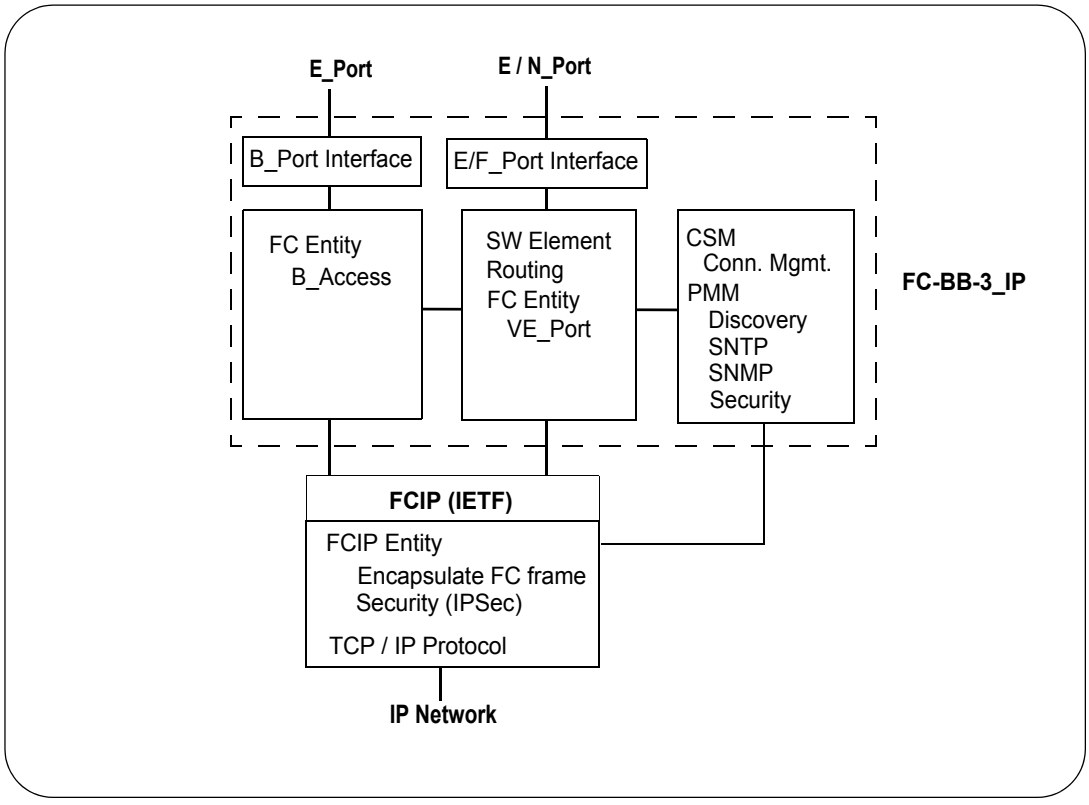

Figure 2 – Scope and components of FC-BB-3_IP model

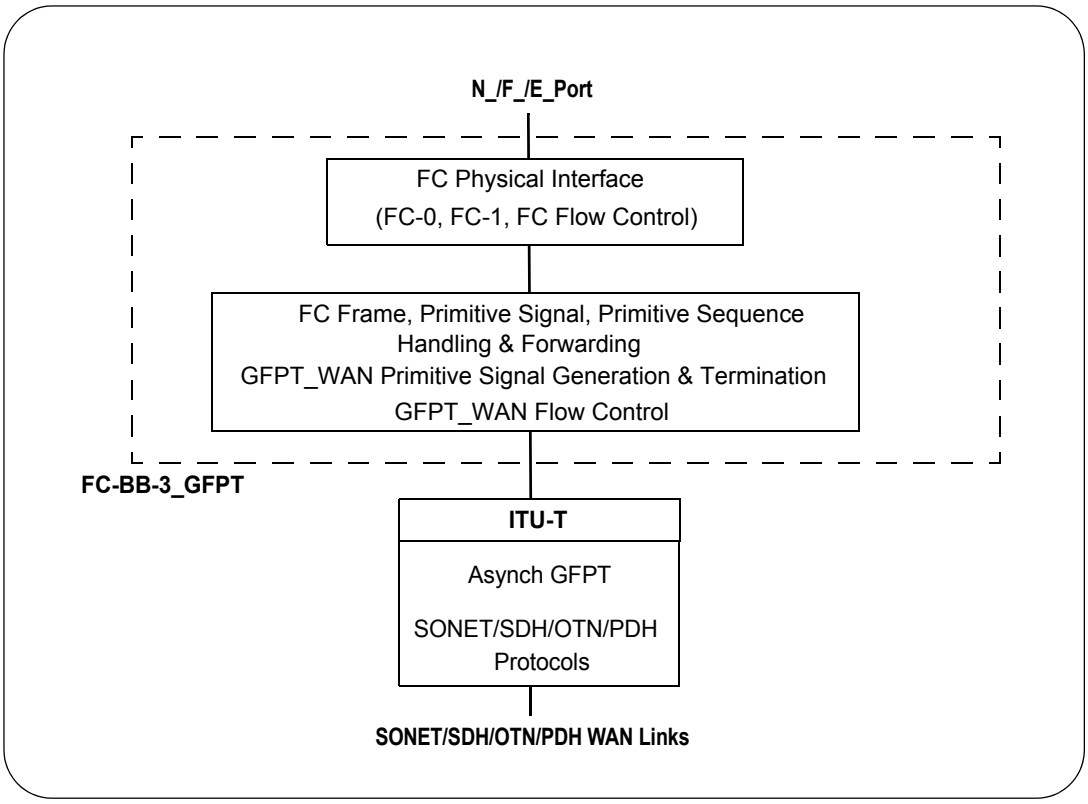

Figure 3 – Scope and components of FC-BB-3_GFPT model

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, applies.

ISO/IEC 3309:1993, *Information technology - Telecommunications and information exchange between systems - High-level Data Link Control (HDLC) Procedures - Frame structure* (withdrawn)

ISO/IEC 13239:1997(E), *Information technology - Telecommunications and information exchange between systems - High-level data link control (HDLC) procedures*

INCITS 426-2007, *Information technology - Fibre Channel Security Protocols (FC-SP)* [1]
(planned as ISO/IEC 14165-431)

ANSI T1.105-2001, *Synchronous Optical Network (SONET) - Basic Description Including Multiplex Structures, Rates, and Formats*

For electronic copies of references under development by INCITS T11, see www.t11.org

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

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

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

Copies of the following approved ITU-T standards may be obtained through the ITU-T Publications department at http://www.itu.int

ITU-T Rec. I.356 (2000), *B-ISDN ATM layer cell transfer performance*

ITU-T Rec. I.363.5 (1996), *B-ISDN ATM Adaptation Layer specification: Type 5 AAL*

ITU-T X.25-1997, *Interface between Data terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit, X.25-1997*

ITU-T Q.2931 (1995), *Broadband Integrated Services Digital Network (B-ISDN) Digital Subscriber Signaling System No. 2 (DSS2); User-Network Interface (UNI) Layer 3 Specification for Basic Call/Connection Control*

ITU-T Q.2971 (1995), *Broadband Integrated Services Digital Network (B-ISDN) Digital Subscriber Signaling System No. 2 (DSS2); User-Network Interface (UNI) Layer 3 Specification for Point-to-Multipoint Call/ Connection Control*

ITU-T Rec. G.707/Y.1322, *Network/Node Interface for the Synchronous Digital Hierarchy (SDH),* 2003

ITU-T Rec. G.709/Y.1331, *Interfaces for the Optical Transport Network (OTN),* 2004

ITU-T Rec. G.7041/Y.1303, (2003), *Generic Framing Procedure (GFP)*

ITU-T Rec. G.7042/Y.1305 (2004), *Link capacity adjustment scheme (LCAS) for virtual concatenated signals*

ITU-T Rec. G.7043/Y.1343 (2004) *Virtual concatenation of PDH signals*

ITU-T Rec. G.783, (2000), *Characteristics of synchronous digital hierarchy (SDH) equipment functional blocks*

ITU-T Rec. G.798, (2002), *Characteristics of optical transport network hierarchy equipment functional blocks*

ITU-T Rec. G.8040/Y.1340, (2003), *GFP Frame Mapping into Plesiochronous Digital Hierarchy (PDH)*

ITU-T Rec. G.806, *Characteristics of Transport Equipment - Description Methodology and Generic Functionality*

Copies of the following approved IETF standards may be obtained through the Internet Engineering Task Force (IETF) at www.ietf.org.

RFC 1619, *PPP over SONET/SDH*, May 1994

1. T11/Project 1570D/Rev. 1.6

RFC 1661, *The Point-to-Point Protocol (PPP),* July 1994

RFC 1662, *PPP in HDLC-like Framing*, July 1994

RFC 2030, *Simple Network Time Protocol (SNTP) Version 4 for IPv4, IPv6 and OSI,* October 1996

RFC 3643, *Fibre Channel (FC) Frame Encapsulation,* December 2004

RFC 3821, *Fibre Channel Over TCP/IP (FCIP)*, July 2004

RFC 3822, *Finding Fibre Channel over TCP/IP (FCIP) Entities Using Service Location Protocol version 2 (SLPv2),* July 2004

Copies of the following approved ATM Forum standards may be obtained through the MFA Forum at http://www.mfaforum.org/tech/atm_specs.shtml

ATM Forum (1996), *Traffic Management Specification 4.0*. AF-TM-0056.000