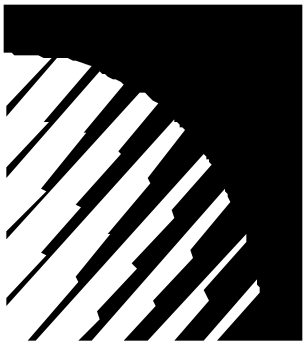

The ATM Forum

Technical Committee

PICS Proforma of the DS3 Direct Mapped Physical Layer Interface

af-test-0082.000

May, 1997

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Leslie Collica, Editor

Contents

Introduction

To evaluate conformance and the interoperability capabilities of a particular implementation, a statement is required designating which capabilities and options have been implemented. Such a statement is called a PICS (Protocol Implementation Conformance Statement) document as defined in ISO/IEC 9646-1 [1]. This particular PICS deals with the implementation of the DS3 Physical Layer Interface Specification.

Scope

This document provides the PICS proforma for the DS3 Physical Layer interface as described in ATM Forum specification af-phy-0054.000, DS3 Physical Layer Interface Specification [3], and ANSI T1.646 Broadband ISDN - Physical Layer Specification for User-Network Interfaces inclusing DS1/ATM [4] in compliance with the relevant requirements, and in accordance with the relevant guidelines, given in ISO/IEC 9646-2 [8]. This later version of the DS3/ATM specification utilizes direct mapping of ATM cells into DS3 payload. The initial version of the DS3 specification from the ATM Forum was published as part of ATM User-Network Interface Specification, Version 3.0. DS3 Physical Layer Specification, Versions 3.0 and 3.1, and utilizes the Physical Layer Convergence Protocol (PLCP) format for inserting ATM cells into the DS3 payload. The direct mapped version is the preferred version [4].

Normative References

[1] ISO/IEC 9646-1 1990, Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: Abstract test suite specification.

[2] ATM Forum, "ATM User-Network Interface Specification, Version 3.0," Section 2.2, PTR Prentice Hall,1993.

[3] ATM Forum af-phy-0054.000, "DS3 Physical Layer Interface Specification", ATM Forum, January, 1996.

[4] ANSI T1.646-1995, "Broadband ISDN - Physical Layer Specification for User-Network Interfaces Including DS1/ATM."

[5] ANSI T1.404-1994, “Network-to-Customer Installation - DS3 Metallic Interface Specification.”

[6] ANSI T1.102-1993, “Digital Hierarchy - Electrical Interfaces.”

[7] ITU-T Recommendation I.432.1, “B-ISDN User-Network Interface Physical Layer Specification - General Characteristics,” 1996.

[8] ISO/IEC 9646-2 1990, Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification. (See also ITU-T Recommendation X.290, 1991).

Acronyms

ATM	Asynchronous Transfer Mode
HEC	Header Error Control
IUT	Implementation Under Test
M	Mandatory
NI	Network Interface
O	Optional
O.<n>	Optional, but, if chosen, support is required for either at least one or only one of the options in the group labeled by the same numeral <n>
P	Prohibited
PMD	Physical Medium Dependent
ppm	Parts per million
S.<i>	Supplementary information number i
TC	Transmission Convergence
X.<i>	Exceptional information number I

Conformance Statement

The supplier of a protocol implementation which is claimed to conform to af-phy-0054.000, “DS3 Physical Layer Interface Specification,” is required to complete a copy of the PICS Proforma provided in Section 3 and is required to provide the information necessary to identify both the supplier and the implementation.

Identification of Implementation

Implementation Under Test (IUT) Identification:

IUT Name: _____

_____

IUT Version: _____

_____

System Under Test (SUT) Identification:

SUT Name: _____

Hardware Configuration: _____

_____

_____

Operating

System: _____

Product Supplier:

Name: _____

Address:

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

Additional Information:

_____

_____

_____

Client:

Name: _____

Address:

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

Additional Information: _____

_____

PICS Contact Person:

Name: _____

Address:

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

Additional Information: _____

_____

PICS PICS-System Conformance Statement:

Provide the relationship of the PICS with the System Conformance Statement for the system:

_____

_____

_____

Identification of the protocol:

This PICS Proforma applies to the main body of the following document:

ATM Forum, af-phy-0054.000, "DS3 Physical Layer Interface Specification", January, 1996.

Reference is also made to the relevant ANSI references [4] and [6].

The main body of af-phy-0054.000 specifies the preferred implementation of DS3/ATM, i.e., the direct mapped version. Annex A contains the earlier version that utilizes a PLCP format. The PICS Proforma for the PLCP version is af-test-0023.000, “PICS Proforma for the DS3 Physical Layer Interface, Version 1.0.”

PICS Proforma

Global Statement of Conformance

The implementation described in this PICS meets all of the mandatory requirements of the reference protocol.

___Yes

___No

Note: Answering "No" indicates non-conformance to the specified protocol. Non-supported mandatory capabilities are to be identified in the following tables, with an explanation in the comments section of each table of why the implementation is non-conforming.

Instructions for Completing the PICS Proforma

The PICS Proforma is a fixed-format questionnaire. Answers to the questionnaire should be provided in the rightmost columns, either by simply indicating a restricted choice (such as Yes or No), or by entering a value or a set of range of values.

A supplier may also provide additional information, categorized as exceptional or supplementary information. These additional information should be provided as items labeled X.<i> for exceptional information, or S.<i> for supplemental information, respectively, for cross reference purposes, where <i> is any unambiguous identification for the item. The exception and supplementary information are not mandatory and the PICS is complete without such information. The presence of optional supplementary or exception information should not affect test execution, and will in no way affect interoperability verification. The column labeled ‘Spec Ref’ gives a pointer to sections of the specification for which the PICS Proforma is being written.

Physical Medium Dependent (PMD) Sublayer Specification

Item #	Protocol Feature	Status	Spec Ref.	Support
1.0.0	Does the IUT PMD conform to clause 9 of [4]?	M	2.	Yes__ No__ X__ S__
1.0.1	Is the interface symmetric, clause 9.1 of [4]?	M	2.	Yes__ No__ X__ S__
1.0.2	Is the bit rate 44.736 Mb/s when synchronized to the network, clause 9.2 of [4]?	M	2.	Yes__ No__ X__ S__
1.0.3	Is the bit rate 44.736 Mb/s ±20 ppm when not synchronized to the network, clause 9.2 of [4]?	M	2.	Yes__ No__ X__ S__
1.0.4	Is powering not provided across the NI, clause 9.3 of [4]?	M	2.	Yes__ No__ X__ S__
1.1.1	When the system location in the UNI is a NI, is the equal level, bi-directional, DSX-3 signal is as described in clause 9.5.1 of [4] and specified in ANSI T1.404 [5]?	M	2.	Yes__ No__ X__ S__
1.1.2	When the system location in the UNI is not an NI, is the equal level, bi-directional, DSX-3 signal is as described in clause 9.5.1 of [4] and specified in ANSI T1.102 [6]?	M	2.	Yes__ No__ X__ S__
1.2.1	Are there two coaxial cables, one for each direction, clause 9.5.1.1 of [4]?	M	2.	Yes__ No__ X__ S__
1.2.2	Are the coax cables 75 ohms ±5% as described in clause 9.5.1.1 of [4]?	M	2.	Yes__ No__ X__ S__
1.3.1	Is the line code B3ZS?	M	2.	Yes__ No__

				X__ S__
1.4.1	Is the transmitter signal level with the adjustable pre-equalizer such that the DSX-3 characteristics are achieved at the end of a reference cable of length 450 feet, clause 9.5.1.3 of [4]?	M	2.	Yes__ No__ X__ S__
1.4.2	Is the signal at the receiver the DSX-3 signal attenuated by a reference cable of length 0 to 450 feet, (450 feet yields 5.5 dB of attenuation), clause 9.5.1.4 of [4]?	M	2.	Yes__ No__ X__ S__

Comments:

_____

_____

_____

Transmission Convergience (TC) Sublayer Specification

Item #	Protocol Feature	Status	Spec Ref	Support
2.0.1	Does the system use the C-Bit Parity framing format as in clause 9.4.1 of [4] and as shown in Figure 1 of [3]?	M	3.	Yes__ No__ X__ S__
2.0.2	Is the format of information as in Figure 1 of [3]?	M	3.	Yes__ No__ X__ S__
2.0.3	Is transmission of information in Figure 1 from left-to-right?	M	3.	Yes__ No__ X__ S__
2.0.4	Are ATM cells directly mapped into the DS-3 84-bit payload, nibble aligned with cells starting on any nibble boundary?	M	3.	Yes__ No__ X__ S__
2.1.1	If cell rate decoupling is performed at the ATM layer, are unassigned cells used when assigned cells are unavailable?	M	3.	Yes__ No__

				X__ S__
2.1.2	When neither assigned nor unassigned cells are available from the ATM layer, does the physical layer perform cell rate decoupling using idle cells with headers as shown in Figure 2 of [3] and content "0110 1010" repeated 48 times?	M	3.	Yes__ No__ X__ S__
2.1.3	If idle cells are used, are they not passed to the ATM Layer?	M	3.	Yes__ No__ X__ S__
2.2.1	Is the HEC generation, HEC check, self-synchronizing scrambler, cell delineation as [4] and [7]?	M	3.	Yes__ No__ X__ S__

Comments:

_____

_____

_____