The ATM Forum
Technical Committee

PICS Proforma for the 51.84 Mb/s Mid-range Physical Layer Interface

af-test-0044.000

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1. Introduction

Prior to the conformance testing and the interoperability testing of IUTs, it is necessary to have the PICS (Protocol Implementation Conformance Statement) documents for both implementations.

This particular PICS deals with the implementation of the 51.84Mb/s Mid-range Physical Layer Interface for UTP-3.

1.1 Scope

This document provides the PICS proforma for the Mid-range Physical Layer Interface as described in the Mid-range ATM User-Network Interface Specification [1], in compliance with the relevant requirements, and in accordance with the relevant guidelines, given in ISO/IEC 9646-2 [2].

1.2 Normative References

[1] AF-PHY-0018.000, "Mid-range Physical Layer Specification for Category 3 Unshielded Twisted-Pair", September, 1994.

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

[3] American National Standard for Telecommunications, "Broadband ISDN and DS1/ATM User-Network Interfaces: Physical Layer Specification" 1993.

[4] ITU-T Recommendation I.432, "B-ISDN User-Network Interface - Physical Layer Specification", 1993.

[5] EIA/TIA, "Commercial Building Telecommunications Cabling Standard, TIA/EIA-568-A", Draft Version, July, 1994.

[6] ANSI T1.105, "Digital Hierarchy - Optical Interface Rates and Formats Specifications", 1991.

1.3 Definitions

ATM	Asynchronous Transfer Mode
HEC	Header Error Control
IUT	Implementation Under Test
LOS	Loss of Signal
M	Mandatory
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 labelled by the same numeral <n>
P	Prohibited
PDU	Protocol Data Unit
PMD	Physical Media Dependent
S.<i>	Supplementary information number i
SAR	Segmentation and Reassembly (Sublayer)
SDU	Service Data Unit
SPE	SONET Synchronous Payload Envelope
TC	Transmission Convergence
UTP-3	Category 3 Unshielded Twisted-Pair
X.<i>	Exceptional information number i

1.4 Conformance Statement

The supplier of a protocol implementation which is claimed to conform to the Mid-range Physical Layer Interface over UTP-3 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.

2. Identification of the Implementation

Implementation Under Test (IUT) Identification

IUT Name: _____

_____

IUT Version: _____

_____

System Under Test

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 following document:

AF-PHY-0018.000, "Mid-range Physical Layer Specification for Category 3 Unshielded Twisted-Pair", September, 1994.

3. PICS Proforma

3.1 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.

3.2 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. This additional information should be provided as items labelled 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 exceptional and supplementary information is 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.

3.3 Physical Media Dependent (PMD) Specification

Item	Protocol Feature	Status Predicate	Specification Reference	Support
3.3.1	Do the IUT physical medium (cable & connecting hardware) characteristics comply with Sections 10.2, 10.4, 10.5 and 10.6 of [5]?	M	2.7-2.8	Yes__No__X__ S__
3.3.2	Does the IUT transmitter conform to requirements for operation at 51.84 Mb/s?	M	2.5.2, 2.5.2.1	Yes__No__X__ S__
3.3.3	Does the IUT transmitter encoding conform to requirements for operation at 25.92 Mb/s?	O	2.5.2, 2.5.2.2	Yes__No__X__ S__
3.3.4	Does the IUT transmitter encoding conform to requirements for operation at 12.96 Mb/s?	O	2.5.2, 2.5.2.3	Yes__No__X__ S__
3.3.5	Does the IUT transmitter conform to the timing requirements?	M	2.3	Yes__No__X__ S__
3.3.6	Does the IUT transmitter conform to the jitter requirements?	M	2.4	Yes__No__X__ S__
3.3.7	Does the IUT transmitter output characteristics conform to the requirements?	M	2.5.3	Yes__No__X__ S__
3.3.8	Is the IUT receiver able to achieve the BER of 10^{-10}?	M	2.5.4, 2.2	Yes__No__X__ S__
3.3.9	Does the IUT transceiver implement the scrambling and descrambling?	M	2.6	Yes__No__X__ S__
3.3.10	Does the IUT receiver return loss characteristics conform to the requirements?	M	2.5.4.1	Yes__No__X__ S__
Comments:				

3.4 Transmission Convergence (TC) Sublayer Functions

Item	Protocol Feature	Status Predicate	Specification Reference	Support
3.4.1	Does the IUT process and generate all mandatory active overhead bytes?	M	3.3.2.	Yes__No__X__ S__
3.4.2	Does the IUT perform the SONET procedures related to STS-1 frame scrambling, timing and framing as defined in [3] and [4]?	M	3.1	Yes__No__X__ S__
3.4.3	Does the IUT receiver implement the HEC error detection?	M	3.2.1	Yes__No__X__ S__
3.4.4	Does the IUT transmitter generate the HEC byte?	M	3.2.1	Yes__No__X__ S__
3.4.5	Does the IUT implement Cell Scrambling and descrambling as defined in [4], Section 4.5.3?	M	3.2.2	Yes__No__X__ S__
3.4.6	Does the IUT map ATM cells into the SONET STS-1 payload capacity?	M	3.2.3	Yes__No__X__ S__
3.4.7	Does the IUT perform cell delineation using the HEC based algorithm described in [4], Section 4.5.1.1?	M	3.2.4	Yes__No__X__ S__
3.4.8	Does the IUT support the ATM Payload Construction Indication?	M	3.2.5	Yes__No__X__ S__
3.4.9	When the IUT is transmitting, does it encode all undefined overhead bytes/bits as zero patterns before scrambling?	M	3.3.1	Yes__No__X__ S__
3.4.10	When the IUT is transmitting, does it encode all Fixed Stuff bytes?	M	3.3.1	Yes__No__X__ S__
3.4.11	When the IUT is receiving, does it ignore all overhead bytes/bits undefined at the UNI?	M	3.3.1	Yes__No__X__ S__
3.4.12	Does the IUT transmitter transmit the error monitoring bytes B1,B2 and B3?	M	3.3.2.3, 3.3.2.5, 3.3.2.9	Yes__No__X__ S__
3.4.13	Does the IUT receiver perform Section Error Monitoring functions?	O	3.3.2.3	Yes__No__X__ S__
3.4.14	Does the IUT receiver perform Line Error Monitoring functions?	O	3.3.2.5	Yes__No__X__ S__
3.4.15	Does the IUT receiver perform Path Error Monitoring functions?	O	3.3.2.9	Yes__No__X__ S__
3.4.16	If the IUT supports transmission of floating SPE, does it transmit valid values in the bytes according to the algorithm in [6]?	O.1	3.3.2.4	Yes__No__X__ S__
3.4.17	If the IUT supports transmission of fixed SPE, does it transmit valid values in the bytes according to the algorithm in [6]?	O.1	3.3.2.4	Yes__No__X__ S__

Item	Protocol Feature	Status Predicate	Specification Reference	Support
3.4.18	If the IUT transmitting equipment supports fixed SPE and Path AIS is not issued, does the IUT code H1, H2, and H3 as: H1:0110xx10; H2:00001010, and H3:00000000?	O.2	3.3.2.4	Yes__No__X__ S__
3.4.19	If the IUT transmitting equipment supports fixed SPE and Path AIS is issued, does the IUT set all bits in H1, H2, and H3 bytes to 1?	O.2	3.3.2.4	Yes__No__X__ S__
3.4.20	Does the IUT receiving equipment process the H1, H2, and H3 bytes?	M	3.3.2.4	Yes__No__X__ S__
3.4.21	Does the IUT perform the Line Performance Monitoring function (FEBE function) as defined in Section 14.1.4 of [3] and Section 6.3.2.4 of [4]?	O	3.3.2.7	Yes__No__X__ S__
3.4.22	Does the IUT implement the cell delineation times in conformance with the state transition timing requirements as described in Section 11.4 of [3] and Section 4.5.1 of [4]?	O	3.2.4	Yes__No__X__ S__
Comments: O.1 - The IUT must support one of these capabilities. O.2 - The IUT must support one of these capabilities.				

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