The ATM Forum
Technical Committee

PICS Proforma for the DS3 Physical Layer Interface

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Version 1.0

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Walter Buehler, Editor

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1. Introduction

Prior to the conformance testing and the interoperability testing of two 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 DS3 Physical Layer Interface.

1.1 Scope

This document provides the PICS proforma for the DS3 Physical Layer Interface as described in Section 2.2 of the ATM User-Network Interface Specification Version 3.0 [1], in compliance with the relevant requirements, and in accordance with the relevant guidelines, given in ISO/IEC 9646-2 [3].

1.2 Normative References

[1] ATM Forum, "ATM User-Network Interface Specification Version 3.0", 1993.

[2] ISO/IEC 9646-1: 1991, Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 1: General Concepts. (See also ITU-T Recommendation X.290 (1991))

[3] ISO/IEC 9646-2: 1991, Information technology - Open Systems Interconnection - Conformance Testing Methodology and Interconnection - Part 2: Abstract Test Suite Specification. (See also ITU-T Recommendation X.291 (1991))

[4] American National Standard, "Digital Hierarchy - Supplement to Formats Specifications (DS3 Format Applications) T1.107a-1990", August 16, 1990.

[5] ITU-T, "Integrated Services Digital Network (ISDN): Overall Network Aspects and Functions, ISDN User-Network Interfaces, B-ISDN User- Network Interface Physical Layer Specification, Recommendation I.432", 03/93.

[6] ITU-T, "General Aspects of Digital Transmission Systems, Terminal Equipments - Physical/Electrical Characteristics of Hierarchical Digital Interfaces, Recommendation G.703", 1991.

1.3 Definitions

ATM Asynchronous Transfer Mode

CS	Convergence Sublayer
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
S.<i>	Supplementary information number i
SAR	Segmentation and Reassembly (Sublayer)
SDU	Service Data Unit
X.<i>	Exceptional information number i

1.4 Conformance Statement

The supplier of a protocol implementation which is claimed to conform to the DS3 Physical Layer Interface is required to complete a copy of the PICS proforma provided in Section 3.0 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 - 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:

ATM Forum, "ATM User-Network Interface Specification Version 3.0", 1993.

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 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.

3.3 Physical Layer Interface Format

Item	Protocol Feature	Status Pred.	Spec. Ref.	Support
3.3.1	Is the Physical Media Dependent sublayer based on [6] Section 5?	M	2.2.1	Yes_ No_ X__ S__
3.3.2	Is the DS3 Layer implementation based on [4] Sections 8.1 and 8.4?	M	2.2.1	Yes_ No_ X__ S__
3.3.3	Is the C-Bit parity the default mode of operation?	M	2.2.1	Yes_ No_ X__ S__
3.3.4	Is the implementation capable of generating and processing C-Bit parity?	M	2.2.1	Yes_ No_ X__ S__
3.3.5	Is the implementation capable of interfacing with equipment that does not support C-Bit parity by dropping back into the clear channel mode?	M	2.2.1	Yes_ No_ X__ S__
3.3.6	If the IUT supports C-Bit parity, does it implement the far end alarm codewords specified in [4] Section 8.4.3.1, Figure 19A?	O	2.2.1	Yes_ No_ X__ S__
3.3.7	If the IUT supports C-Bit parity, is the terminal/terminal data link function implemented as specified in [4] Section 8.4.7?	O	2.2.1	Yes_ No_ X__ S__
3.3.8	If the IUT supports C-Bit parity, is the terminal/terminal data link function used for any proprietary functions?	O	2.2.1	Yes_ No_ X__ S__
Comments:				

3.4 PLCP Overhead Utilization

Item	Protocol Feature	Status Pred.	Spec. Ref.	Support
3.4.1	Does the interface support a PLCP overhead utilization as defined in [1]?	M	2.2.1.2	Yes_ No_ X__ S__
3.4.2	Does the interface support a PLCP framing octet pattern as used in SONET and SDH (A1=11110110, A2=00101000)?	M	2.2.1.2.1	Yes_ No_ X__ S__
3.4.3	Does the calculation of the Bit Interleaved Parity - 8 (BIP-8) field follow the procedure given in [1]?	M	2.2.1.2.2	Yes_ No_ X__ S__
3.4.4	Does the implementation support the Cycle/Stuff Counter that operates as described in [1]?	M	2.2.1.2.3	Yes_ No_ X__ S__
3.4.5	Does the implementation support a PLCP G1 (PLCP Path Status) octet that operates as described in [1]?	M	2.2.1.2.4	Yes_ No_ X__ S__
3.4.6	If the FEBE in the G1 Octet is not implemented, is the FEBE set to "1111"?	M	2.2.1.2.4	Yes_ No_ X__ S__
3.4.7	Does the implementation support a Path Overhead Identifier (POI) that conforms to Figure 2-10 of [1]?	M	2.2.1.2.5	Yes_ No_ X__ S__
3.4.8	Does the implementation support Growth Octets as defined in [1]?	M	2.2.1.2.6	Yes_ No_ X__ S__
3.4.9	Does the implementation support Trailer Nibbles whose content is in accordance with [1]?	M	2.2.1.2.7	Yes_ No_ X__ S__
Comments:				

3.5 PLCP Timing

Item	Protocol Feature	Status Pred.	Spec. Ref.	Support
3.5.1	Does the PLCP frame have timing traceable to a Primary Reference Source (PRS) from the network equipment to the customer?	M	2.2.3	Yes_ No_ X__ S__
3.5.2	Is the PLCP frame from the customer to the network equipment traceable to a PRS?	M	2.2.3	Yes_ No_ X__ S__
Comments:				

3.6 Cell Payload Scrambling

Item	Protocol Feature	Status Pred.	Spec. Ref.	Support
3.6.1	Does the IUT implement Cell Payload Scrambling as defined in [5] Section 4.5.3?	M	2.2.4	Yes_ No_ X__ S__
3.6.2	Is the default mode of operation on the IUT Cell Payload Scrambler disabled?	M	2.2.4	Yes_ No_ X__ S__
3.6.3	Does the IUT allow for Cell Payload Scrambler enabling and disabling?	M	2.2.4	Yes_ No_ X__ S__
Comments:				

3.7 HEC Generation/Verification

Item	Protocol Feature	Status Pred.	Spec. Ref.	Support
3.7.1	Does the IUT implement the HEC error detection as defined in [5] Section 4.3.1?	M	2.2.6	Yes_ No_ X__ S__
3.7.2	Does the equipment implement single bit error correction in addition to error detection?	O	2.2.6	Yes_ No_
3.7.3	Does the IUT generate the HEC octet as described in [5] Section 4.3.2?	M	2.2.6	Yes_ No_ X__ S__
3.7.4	Are the generator polynomial and coset used in the IUT in accordance with [5] Section 4.3.2?	M	2.2.6	Yes_ No_ X__ S__
Comments:				