ATIS-0300231.02.2019

DS1 – Layer 1 In-Service Digital Transmission Performance Monitoring

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American National Standard for Telecommunications

DS1 – Layer 1 In-Service Digital Transmission Performance Monitoring

Alliance for Telecommunications Industry Solutions

Approved August 1, 2019

American National Standards Institute, Inc.

Abstract

This standard provides performance monitoring functions and requirements applicable to DS1 digital transmission signals. This standard provides functional requirements to support maintenance and is not meant to be an equipment specification. This standard is one of a set of standards which are applications utilizing the common criteria as specified in ATIS-0300231.

Foreword

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

The Alliance for Telecommunication Industry Solutions (ATIS) serves the public through improved understanding between providers, customers, and manufacturers. The Telecom Management and Operations Committee (TMOC) develops operations, administration, maintenance and provisioning standards, and other documentation related to Operations Support System (OSS) and Network Element (NE) functions and interfaces for communications networks - with an emphasis on standards development related to U.S.A. communication networks in coordination with the development of international standards.

This standard specifies a basic set of monitoring requirements, and provides criteria that are common to a set of standards, the ATIS-0300231 series, which define applications for a specific level in the digital hierarchy. The documents which are included in the ATIS-0300231 series (at the time that this document is approved), are listed below:

- ATIS-0300231, *Layer 1 In-Service Transmission Performance Monitoring*.
- ATIS-0300231.01, *DSL – Layer 1 In-Service Digital Transmission Performance Monitoring*.
- ATIS-0300231.02, *DS1 – Layer 1 In-Service Digital Transmission Performance Monitoring*.
- ATIS-0300231.03, *DS3 – Layer 1 In-Service Digital Transmission Performance Monitoring*.
- ATIS-0300231.04, *SONET – Layer 1 In-Service Digital Transmission Performance Monitoring*.

ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions TMOC, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, TMOC, which was responsible for its development, had the following leadership:

P. Galarza, TMOC Chair (iconectiv)
T. Barrett, Technical Editor (AT&T)

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1 Scope, Purpose, & Application

1.1 Scope

This standard provides uniform functions and requirements for performance monitoring (PM) and alarm/status monitoring for digital transmission signals at DS1 rate. It is intended to be used in conjunction with the core document ATIS-0300231.

1.2 Purpose

This standard is written to provide the minimal set of requirements to provide for uniform and consistent performance monitoring and alarm/status monitoring for the DS1 digital transmission rate. This standard provides definitions for performance primitives (anomalies and defects), performance parameters, and performance failures.

1.3 Application

The application of this standard is as follows:

- It provides definitions of performance and alarm/status parameters, both required and optional, applicable to network elements providing non-intrusive transmission monitoring at the DS1 digital rate;
- It describes the functions related to the collection, storage, thresholding, and reporting of performance monitoring information; and
- It establishes the performance monitoring functions that may be used at network interfaces between telecommunication carriers, at network boundaries, and at customer premises to permit compatible maintenance operations.

Although this standard establishes ranges over which transmission performance can be measured, it does not establish any requirements or guidelines for levels of performance. This standard refers to other American National Standards that address digital transmission and performance criteria.

2 Normative References

The following standards contain provisions, which through reference in this text constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ATIS-0900102, *Digital Hierarchy – Electrical Interfaces*[1].

[1] This document is available from the Alliance for Telecommunications Industry Solutions, 1200 G Street N.W., Suite 500, Washington, DC 20005. < http://www.atis.org >