

DSL Forum

Technical Report

TR-023

Overview of ADSL Testing

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ADSLF Testing & Interoperability Working Group

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Abstract:

This document provides an overview of static interoperability, dynamic interoperability, and conformance testing of ADSL equipment.

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9/18/98	2	First straw ballot
11/28/98	3	Second straw ballot
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1 Introduction

The goal of the ADSL Forum Testing & Interoperability Working Group is to assist in generating interoperability test standards that ensure interoperability among various implementations. The success of ADSL deployment depends on a fully standardized technology and complete cross-vendor interoperability. Current ADSL standards focus on system level specifications, and do not fully address individual product specifications, the basis for cross-product interoperability.

This document is designed to be a living document that changes to adapt to the current technology and the market. The objective is to create a skeleton of test requirements and configurations for all major phases of tests, reflecting ADSL operation. It is envisioned that release of this document will foster additional discussion regarding when testing should occur and test methods that are both adequate and cost effective.

In the following sections, the various test requirements, as well as rationale for these tests are highlighted. Future work will address test configurations and suites for ADSL in controlled environments. Field-testing may be a subset of the requirements in the laboratory.

1.1 Purpose and Scope

This document provides an overview of the different areas of testing. The areas of testing include conformance testing, static interoperability testing, and dynamic interoperability testing. This is a generic introduction document that establishes a skeleton for the various testing needs.

1.2 References

1. ETR-212, Methods for Testing and Specification (MTS), Implementation Conformance Statement (ICS) Proforma Style Guide, ETSI, December 1995.
2. ADSL Forum TR-002, ATM over ADSL Recommendations.
3. ADSL Forum TR-003, Framing and Encapsulation Standards for ADSL: Packet Mode.
4. ATM Forum Test Specifications, af-test-0022.000, December 1994.

1.3 Terminology

The following definitions are used in this document:

1.3.1 Basic Terms

Abstract Test Case: A complete and independent specification of the action required to achieve a specific test purpose (or a specific combination of test purposes),

defined at the level of abstraction of a particular Abstract Test Method, starting at a stable testing state and ending in a stable testing state.

Abstract Test Method: The description of how a Unit Under Test (UUT) is to be tested, given an appropriate level of abstraction to make the description independent of any particular realization of a Means of Testing, but with enough detail to enable tests to be specified for this test method.

Abstract Test Suite: A complete set of abstract test cases, possibly combined into nested test groups, that is necessary to perform conformance testing or IOP testing.

ADSL System: An ATU-C and an ATU-R.

Conformance Testing: Testing the extent to which a unit-under test (UUT) conforms to a specification.

End-to-End Test: Tests the UUT in the context of a network and its architecture.

Executable Test Case: A realization of an abstract test case.

Executable Test Suite: A complete set of executable test cases, possibly combined into nested test groups, that is necessary to perform conformance testing or IOP testing.

Implementation Conformance Statement (ICS): A statement made by the supplier of the system implementation or system claimed to conform to a given specification, stating the capabilities and options implemented, and those that have been omitted. For the purposes of this document, the three types of ICS are ADSL ICS, ADSL Electrical ICS, and ADSL Protocol ICS.

Interoperability (IOP) Testing: Testing the degree of compatibility between an ATU-C and an ATU-R based on the features that both have implemented.

Means of testing: The combination of equipment and procedures that can perform the derivations, selection, parameterization and execution of test cases, in conformance with a reference standardized Abstract Test Suite, and can produce a conformance log.

Test Case: Either an abstract or an executable test case.

Test Group: A named set of related test cases.

Test Suite: Either an abstract or executable test suite.

Unit Under Test (UUT): The part of the system that is to be tested.

1.3.2 Terminology for Conformance Testing

Conforming Implementation: An implementation that satisfies both the static and dynamic conformance requirements in accordance with the specifications stated in the ADSL ICS.

Static Conformance Requirement: A requirement that specifies the values with associated limits of the implemented capabilities permitted in a system that is claimed against the specifications.

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