

**Open Service Access (OSA);
Application Programming Interface (API);
Test Suite Structure and Test Purposes (TSS&TP);
Part 1: Overview**



Reference

DES/SPAN-120088-1

Keywords

API, OSA, TSS&TP

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Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN), and is now submitted for the ETSI standards Membership Approval Procedure.

The present document is part 1 of a multi-part deliverable covering Open Service Access (OSA); Application Programming Interface (API); Test Suite Structure and Test Purposes (TSS&TP), as identified below:

- Part 1: "Overview";**
- Part 2: "Common data definitions";
- Part 3: "Framework";
- Part 4: "Call control SCF";
- Part 5: "User interaction SCF";
- Part 6: "Mobility SCF";
- Part 7: "Terminal capabilities SCF";
- Part 8: "Data session control SCF";
- Part 9: "Generic messaging SCF";
- Part 10: "Connectivity manager SCF";
- Part 11: "Account management SCF";
- Part 12: "Charging SCF".

To evaluate conformance of a particular implementation, it is necessary to have a set of test purposes to evaluate the dynamic behaviour of the Implementation Under Test (IUT). The specification containing those test purposes is called a Test Suite Structure and Test Purposes (TSS&TP) specification.

1 Scope

The present document provides an overview of the Test Suite Structure and Test Purposes (TSS&TP) for the Application Programming Interface for Open Service Access (OSA) defined in ES 201 915 [1].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

- [1] ETSI ES 201 915: "Open Service Access (OSA); Application Programming Interface (API)".
 - [2] ETSI ES 202 170: "Open Service Access (OSA); Application Programming Interface (API); Implementation Conformance Statement (ICS) proforma specification for Framework and SCFs".
 - [3] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
 - [4] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".
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3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ES 201 915-1 [1], ISO/IEC 9646-1 [3] and ISO/IEC 9646-2 [4] and the following apply:

abstract test case: Refer to ISO/IEC 9646-1 [3].

Abstract Test Suite (ATS): Refer to ISO/IEC 9646-1 [3].

Implementation Under Test (IUT): Refer to ISO/IEC 9646-1 [3].

Implementation Conformance Statement (ICS): Refer to ISO/IEC 9646-1 [3].

ICS proforma: Refer to ISO/IEC 9646-1 [3].

Test Purpose (TP): Refer to ISO/IEC 9646-1 [3].

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

API	Application Programming Interface
ATS	Abstract Test Suite
IUT	Implementation Under Test
ICS	Implementation Conformance Statement
OSA	Open Service Access
SCF	Switching Control Function
SOAP	Simple Object Access Protocol
TP	Test Purpose
TSS	Test Suite Structure
WSDL	Web Services Definition Language

4 Overview of OSA testing documentation

The OSA test specification is a multi-part deliverable, following exactly the same part structure as the multi-part OSA base specification, in ES 201 915 [1].

The following structure has been used for the test specification:

- Part 1: "Overview";
- Part 2: "Common Data Definitions"; (empty document, to keep part numbering same as ES 201 915 [1])
- Part 3: "Framework";
- Part 4: "Call Control SCF";
- Part 5: "User Interaction SCF";
- Part 6: "Mobility SCF";
- Part 7: "Terminal Capabilities SCF";
- Part 8: "Data Session Control SCF";
- Part 9: "Generic Messaging SCF";
- Part 10: "Connectivity Manager SCF";
- Part 11: "Account Management SCF";
- Part 12: "Charging SCF".

A related specification, the OSA Implementation Conformance Statement (ICS) proforma specification, has also been produced. This can be found in ES 202 170 [2].

These two specifications are closely related, and the test specifications have been designed to be used with the ICS proforma specification.

5 Test Purposes (TP)

5.1 Test Purpose description method

All test purposes are described in a similar manner.

Each has a 1-line summary description, followed by a reference to the source of the base specification requirement being tested. Each test purpose may include a preamble description, and a pre-requisite or pre-condition, as required.

Then follows a numbered list of methods the tester is required to call on identified interfaces on the IUT, or methods the IUT is required to call on the tester's interfaces.

In addition to the text description of each test purpose, a short sequence diagram has been included to illustrate the sequence of expected events.

Most tests cover testing of the IUT's expected response to valid behaviour from the tester. A number of tests examine response to invalid behaviour from the tester, usually leading to exceptions being raised. Tests without any preconditions are mandatory tests.

5.2 Realization technology issues

The OSA specifications can be realized using many different technologies, and can be used in different types of networks, and different contexts. The OSA specification itself (ES 201 915 [1]) includes only CORBA IDL code as a realization technology. But this is not intended to limit the types of realization technologies which can be used (Java, .NET, WSDL/SOAP etc.).

Similarly, the OSA APIs have been designed to enable their use with numerous different types of networks: fixed or mobile, circuit or packet switched, voice and non-voice networks.

This broad range of realization possibilities poses a problem for the creators of test specifications and test tools. The test specification should not assume a certain realization technology has been used - in doing so, it restricts the use of other valid technologies. But a test tool, which implements the test specification, will have to be implementation technology specific.

The OSA test specifications have been designed to permit their use with any technology used to implement OSA. Many details and specific values, which are necessary to run the test cases, but are specific to how the OSA APIs being tested are implemented, have been left out or generalized in the test specifications.

When these test specifications are implemented, they will need a significant amount of parameterization with items such as interface references, addresses etc. These may be specific to the realization technology or underlying network type. Implementers should not underestimate this task.

5.3 Test specification coverage

The test specifications for OSA cover the Framework and the SCFs.

Specifically, they cover those Framework and SCF interfaces offered to an application, and both the Framework and the Service sides of the Framework to Service interfaces. They do not cover the application interfaces, nor the Framework to Enterprise Operator interfaces. Therefore, for example in the tests for an SCF, the tester takes the role of an application.

The tests have been developed with a view towards promoting interoperability. Rather than attempting to provide complete coverage, in the style of full conformance tests, the tests have been limited to conceivable situations to which a real implementation is likely to be faced, identifying the most likely behavioural sequences, or sequences considered most likely to lead to interoperability difficulties. The tests are only based on conformance requirements related to the externally observable behaviour of the IUT.

Annex A (informative): Bibliography

ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

History

Document history		
V1.1.1	June 2003	Membership Approval Procedure MV 20030801: 2003-06-03 to 2003-08-01