



Technical Specification

**Intelligent Transport Systems (ITS);
Communications Access for Land Mobiles (CALM);
Test specifications for Access Technology Support
(ISO 21218);
Part 1: Implementation Conformance
Statement (ICS) proforma**

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Intelligent Transport Systems (ITS).

The present document is part 1 of a multi-part deliverable covering the test specifications for ITS access technology support (service access points and related procedures) ISO 21218 [1] as identified below:

Part 1: "Implementation Conformance Statement (ICS) proforma";

Part 2: "Test Suite Structure and Test Purposes (TSS & TP)";

Part 3: "Abstract Test Suite (ATS) and partial PIXIT proforma"

Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"should"**, **"should not"**, **"may"**, **"may not"**, **"need"**, **"need not"**, **"will"**, **"will not"**, **"can"** and **"cannot"** are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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Introduction

Communications for Intelligent Transport Systems (ITS) is standardized at ISO TC204 WG16 under the acronym CALM (Communications Access for Land Mobiles). The communications architecture of ITS and cooperative ITS and the concept of an ITS station (ITS-S) as a "Bounded Secured Managed Domain" (BSMD) are specified in ISO 21217 [i.1]. The ITS station reference architecture is based on the OSI model as illustrated in figure 1.

An implementation of a BSMD is named an "ITS station unit" (ITS-SU), or more precisely and "Bounded Secured Managed Entity" (BSME), which may consist of one or several physical units named "ITS station communication units" (ITS-SCU). ITS-SCUs are interconnected via the ITS station-internal network specified in ISO 21217 [i.1].

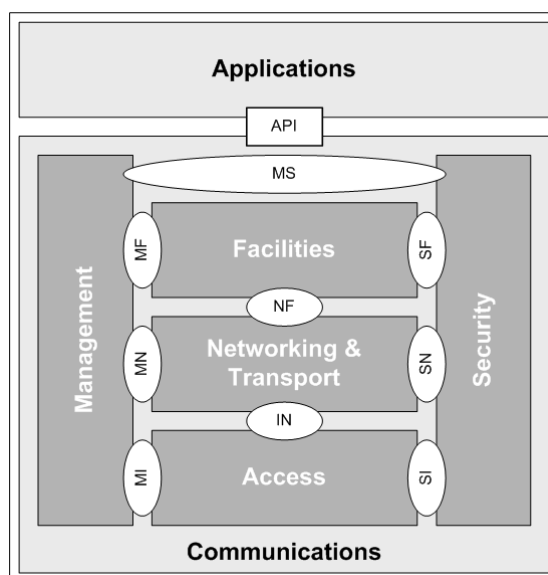


Figure 1: Simplified ITS station reference architecture

The OSI protocol layers of an ITS-S are grouped as shown in figure 1:

- The ITS-S access layer contains OSI layers 1 and 2, using the MI-interface towards the ITS-S management entity and the SI-interface towards the ITS-S security entity, and providing the IN-interface towards the ITS-S networking & transport layer.
- The ITS-S networking & transport layer contains OSI layers 3 and 4, using the MN-interface towards the ITS-S management entity, the SN-interface towards the ITS-S security entity, the IN-interface towards the ITS-S access layer, and providing the NF-interface towards the ITS-S facilities layer.
- The ITS-S facilities layer contains OSI layers 5, 6 and 7, using the MF-interface towards the ITS-S management entity, the SF-interface towards the ITS-S security entity and the NF-interface towards the ITS-S networking & transport layer.

There are further interfaces not presented in the simplified view of figure 1, i.e. the interfaces towards "Applications", which will be provided in an implementation by means of the API illustrated in figure 1.

The MI-interface, the MN-interface, the MF-interface, the SI-interface, the SN-interface, the SF-interface are specified in ISO 24102-3 [2] as service access points (SAPs). The IN-interface is described as an SAP in ISO 21218 [1].

In a distributed implementation of an ITS-S, management commands are exchanged between the ITS-SCUs by means of the "ITS station-internal management communications protocol" (IICP) specified in ISO 24102-4 [i.3]. Such management commands may directly carry functions of service primitives of SAPs to which they are addressed. By this, functions of the service primitives become observable as PDUs and thus testable. Consequently the present document indirectly provides also the foundations for testing functions of service primitives, but not the service primitives themselves.

The functionality of "ITS station-internal management communications" may be used to provide the upper tester access in the SUT as specified in ISO 24102-3 [2], ETSI EG 202 798 [i.2], and ETSI TS 102 760-2 [i.4].

Details of the ITS-S access layer which are subject of the present document are illustrated in figure 2.

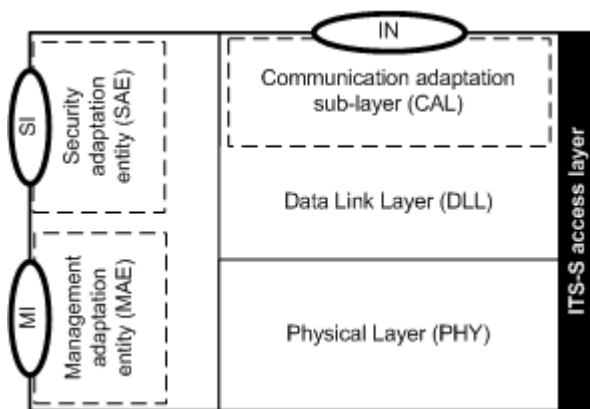


Figure 2: Illustration of the ITS-S access layer

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1 Scope

The present document specifies "Implementation Conformance Statement" (ICS) proformas for functionality of the ITS-S access layer service access points MI-SAP and IN-SAP and related procedures as defined in ISO 21218 [1] in accordance with the relevant guidance given in ETSI EG 202 798 [i.2].

This proforma is intended for use by suppliers of equipment which is claimed to conform to the functionality of the ITS-S access layer service access points and procedures as specified in ISO 21218 [1] in combination with a defined "Communication interface" (CI) described in ISO 21217 [i.1]. Without a CI supporting ISO 21218 [1], this proforma is not applicable.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a specific CI. Such a statement is called an Implementation Conformance Statement (ICS). The present document provides proforma ICS templates, to be filled in by equipment suppliers.

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

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

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ISO 21218:2013: "Intelligent Transport Systems - Communications access for land mobiles (CALM) - Access technology support".
- [2] ISO 24102-3:2013: "Intelligent Transport Systems - Communications access for land mobiles (CALM) - ITS station management - Part 3: Service access points".
- [3] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ISO 21217:2014: "Intelligent Transport Systems - Communications access for land mobiles (CALM) - Architecture".
- [i.2] ETSI EG 202 798: "Intelligent Transport Systems (ITS); Testing; Framework for conformance and interoperability testing".
- [i.3] ISO 24102-4:2013: "Intelligent Transport Systems - Communications access for land mobiles (CALM) - ITS station management - Part 4: Station-internal management communication".
- [i.4] ETSI TS 102 760-2: "Intelligent Transport Systems (ITS); Communications Access for Land Mobiles (CALM); Test specifications for Access Technology Support (ISO 21218); Part 2: Test Suite Structure and Test Purposes (TSS & TP)".

- [i.5] ISO 15628:2013: "Intelligent transport systems -- Dedicated short range communication (DSRC) -
- DSRC application layer".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO 21218 [1], ISO 21217 [i.1], ISO 24102-3 [2], ISO 24102-4 [i.3], ETSI EG 202 798 [i.2] and ISO/IEC 9646-7 [3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO 21218 [1], ISO 21217 [i.1], ISO 24102-3 [2], ISO 24102-4 [i.3], ETSI EG 202 798 [i.2] and ISO/IEC 9646-7 [3] apply.

4 Conformance requirement concerning ICS

The actual ICS proforma to be filled in by a supplier shall be technically equivalent to the text of the ICS proforma given in the normative annexes of the present document, and shall preserve the numbering, naming and ordering of the proforma items.

An ICS which conforms to the present document shall be a conforming ICS proforma completed in accordance with the instructions for completion given in annex A.

Annex A (normative): Guidance for completing the ICS proforma

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the Guidance for completing the ICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed ICS proforma.

A.1 Purposes and structure

The purpose of this ICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in ISO 21218 [1] may provide information about the implementation in a standardized manner.

The ICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the ICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- ICS proforma tables.

A.2 Abbreviations and conventions

A.2.1 General

The ICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [3].

A.2.2 Item column

The item column contains a number which identifies the item in the table.

A.2.3 Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".