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**Intelligent transport systems — ITS  
station management —**

**Part 4:  
Station-internal management  
communications**

*Systèmes intelligents de transport — Gestion des stations ITS —  
Partie 4: Communications de gestion interne à la station*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This second edition cancels and replaces the first edition (ISO 24102-4:2013) which has been technically revised. It also incorporates the Amendment ISO 24102-4:2013/Amd1:2017.

A list of all parts in the ISO 24102 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

NOTE The former ISO 24102-5 has been converted into a separate standard ISO 22418<sup>[1]</sup>, as it is not a station management standard.

## Introduction

This document is part of a series of International Standards for communications in intelligent transport systems (ITS) based on the ITS station and communications architecture specified in ISO 21217 and illustrated in [Figure 1](#).

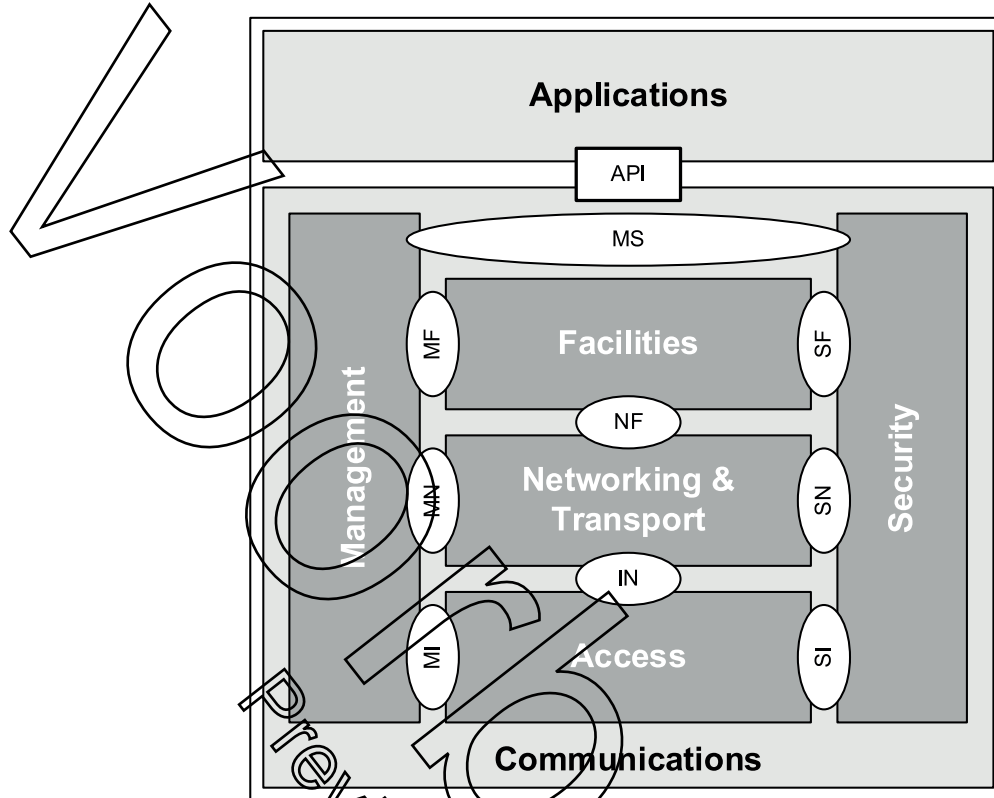


Figure 1 — ITS station reference architecture with named interfaces

This document is Part 4 of a multi-part standard which determines the intelligent transport systems (ITS) station-internal management communications that is architecturally located in the ITS station Management entity.

The ITS station management entity provides functionality related to the management of communication protocol layers (Access, Networking & Transport, Facilities), the Security entity, and the ITS Applications entity introduced in ISO 21217:2014 and presented in [Figure 1](#).

ITS station management is specified as a distributed process, where no supervisory entity is employed.

Voorbeeld  
Preview

# Intelligent transport systems — ITS station management —

## Part 4: Station-internal management communications

### 1 Scope

This document provides specifications for secure ITS station-internal management communications.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 8825-2, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER)*

ISO 17419:2018, *Intelligent transport systems — Cooperative ITS — Globally unique identification*

ISO 21217:2014, *Intelligent transport systems — Communications access for land mobiles (CALM) — Architecture*

ISO 21218, *Intelligent transport systems — Hybrid communications — Access technology support*

ISO 24102-1, *Intelligent transport systems — ITS station management — Part 1: Local management*

ISO 24102-3, *Intelligent transport systems — ITS station management — Part 3: Service access points*

ISO 24102-6, *Intelligent transport systems — ITS station management — Part 6: Path and flow management*

ETSI TS 102 797-2, *Intelligent Transport Systems (ITS); Road Transport and Traffic Telematics (RTTT); Test specifications for Intelligent Transport Systems, Communications access for land mobiles (CALM), ITS station management (ISO 24102); Part 2: Test Suite Structure and Test Purposes (TSS & TP)*

ETSI TS 102 797-3, *Intelligent Transport Systems (ITS); Road Transport and Traffic Telematics (RTTT); Test specifications for Intelligent Transport Systems, Communications access for land mobiles (CALM), ITS station management (ISO 24102); Part 3: Abstract Test Suite (ATS) and partial PIXIT information*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21217, ISO 21218, ISO 24102-1, and ISO 24102-3 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

#### 3.1

##### ITS-S communication unit

physical unit in an ITS-SU containing a part or all of the functionality of an ITS-S

[SOURCE: ISO 21217:2014, 3.21, modified — Note 1 to entry was deleted.]

## 4 Symbols and abbreviated terms

For the purposes of this document, the abbreviated terms given in ISO 21217:2014, ISO 21218, ISO 24102-1, and ISO 24102-3 and the following apply.

ITS-SCU	ITS station Communication Unit
ITS-SCU-ID	ITS-SCU Identifier
ITS-SCUID	Globally unique identifier of an ITS-SCU

NOTE ITS-SCUID is specified in ISO 17419 as a globally unique identifier, whilst ITS-SCU-ID is specified in this document as an addressing element for IIC.

IIC	ITS station-internal management communications
IICM	IIC manager
IICA	IIC agent
IICP	IIC protocol
n/a	not applicable

## 5 ITS station management

The ITS station management includes functionality specified in the various parts of this multi-part International Standard:

- 1) The functionality of local ITS station management specified in ISO 24102-1.
- 2) The functionality of remote ITS station management specified in ISO 24102-2<sup>[2]</sup>.
- 3) The functionality of service access points specified in ISO 24102-3.
- 4) **The functionality of ITS station-internal management communications specified in this document (Part 4).**
- 5) Void.
- 6) The functionality of path and flow management specified in ISO 24102-6.

ITS station-internal management communications interconnects ITS station communication units (ITS-SCUs) of the same ITS station (ITS-S) via the ITS station-internal network illustrated in ISO 21217. This communication is also referred to as "ITS-S Internal management Communications" (IIC) in this document. IIC allows remote access to management SAPs specified in ISO 21217 with details specified in ISO 24102-3.

IIC may be secured following the principles of trusted distributed systems.

Detailed mandatory requirements are specified in the following clauses of this document.

- [Clause 6](#) specifies the IIC reference architecture.
- [Clause 7](#) specifies IIC protocol data units (PDUs).
- [Clause 8](#) specifies communication procedures.
- [Clause 9](#) specifies management procedures.
- [Clause 10](#) specifies security elements and procedures.



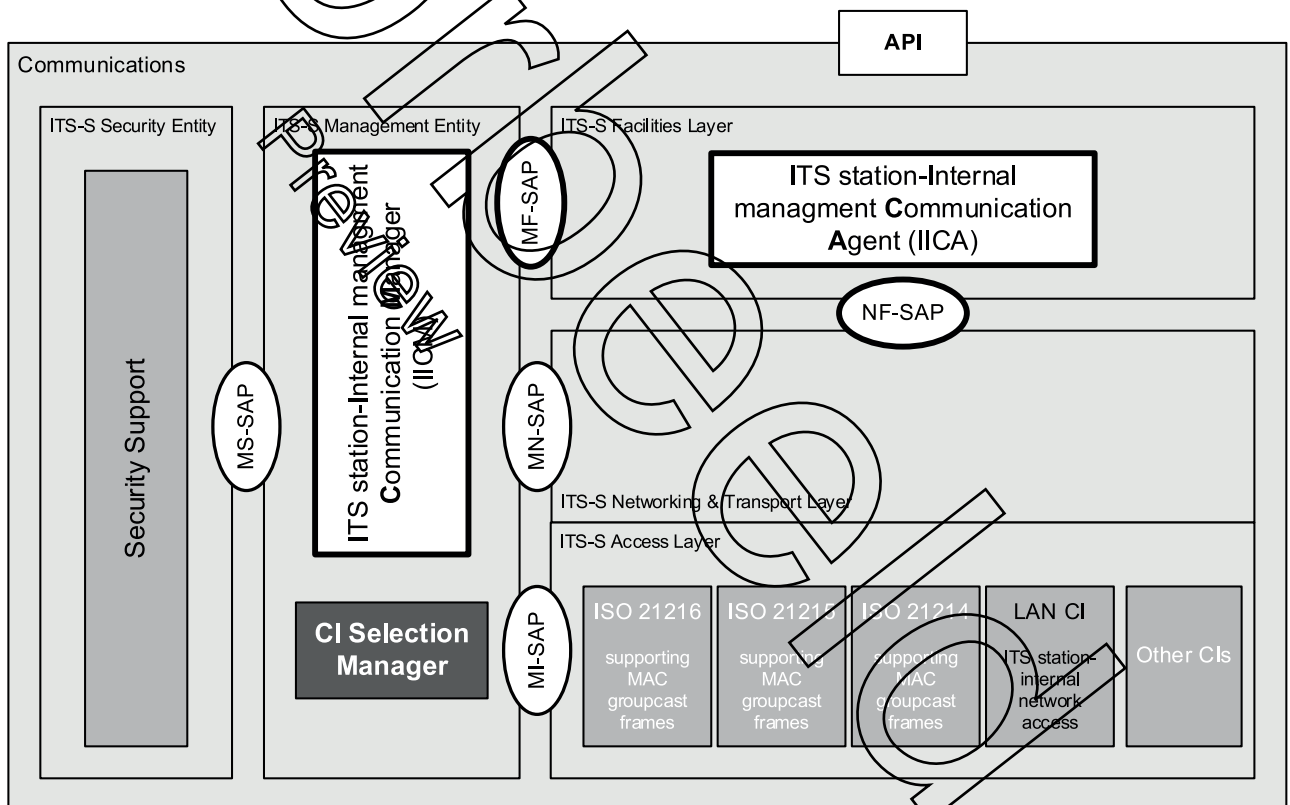
- [Clause 11](#) specifies conformance declaration.
- [Clause 12](#) specifies test methods.
- [Annex A](#) specifies an ASN.1 module.
- [Annex B](#) specifies IIC PDUs.
- [Annex C](#) specifies the implementation conformance statement (ICS) proforma.
- [Annex D](#) exemplifies communication service parameters for IIC for usage in implementations compliant with ISO 17423[5].

## 6 Reference architecture

"ITS-S Internal management Communications" (IIC) is communications between ITS-S Management Entities of different ITS-SCUs of the same ITS-SU via the ITS station-internal network. A specific purpose of IIC is remote access to management service access points MI-SAP, MN-SAP, MF-SAP, MA-SAP and MS-SAP. The concept of ITS-SCUs is specified in ISO 21217. An ITS-SCU can support IICP disregard of the ITS-S roles it supports.

NOTE The MA-SAP is part of the API presented in [Figure 2](#).

The reference architecture for IIC is illustrated in [Figure 2](#).



**Figure 2 — Reference architecture for ITS station-internal management communications**

Source and destination of IIC protocol data units are instances of the "ITS-S Internal management Communications Manager" (IICM). Transmission requests from the IICM are forwarded to the "ITS-S Internal management Communications Agent" (IICA) via the MF-SAP. Notifications of received IIC PDUs are sent by the IICA via the MF-SAP to the IICM.

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