International Standard

ISO 17423

Intelligent transport systems — Application requirements and objectives

Systèmes de transport intelligents — Exigences et objectifs des applications

Second edition
2025-04

Reference number
ISO 17423:2025(en)

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Published in Switzerland

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Foreword

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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 document 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).

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This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems,* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 17423:2018), which has been technically revised.

The main changes are as follows:

— "Cooperative systems" has been removed from the title to align with the unchanged Scope;

— references have been updated;

— the ASN.1 module has been aligned with the latest developments of other ASN.1 modules (this alignment does not introduce technical changes in the module);

— general editorial improvements have been performed to improve readability.

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.

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Introduction

Abstracting applications from communications is a useful basic architectural principle of intelligent transport systems (ITS) embodied in the ITS station and communication architecture presented in ISO 21217.

NOTE The term “Cooperative ITS” (C-ITS) indicates specific features of ITS. For the purposes of this document, no distinction between ITS and C-ITS is needed.

Applications and communications are linked together using the concepts of flows and paths and communication profiles described in ISO 21217, with related flow and path management procedures specified in ISO 24102-6. ITS station management uses communication requirements and objectives of applications, together with the capabilities of the ITS station (status of available communication protocol stacks) and sets of decision rules (regulations and policies), to select suitable parameterized ITS-S communication protocol stacks, also referred to as "ITS-S Communication profiles" (ITS-SCP), for each source of a potential flow, as illustrated in Figure 1. A set of communication requirements is referred to as a "flow type" in ISO 24102-6. Well-known registered flow types are specified in ISO 17419.

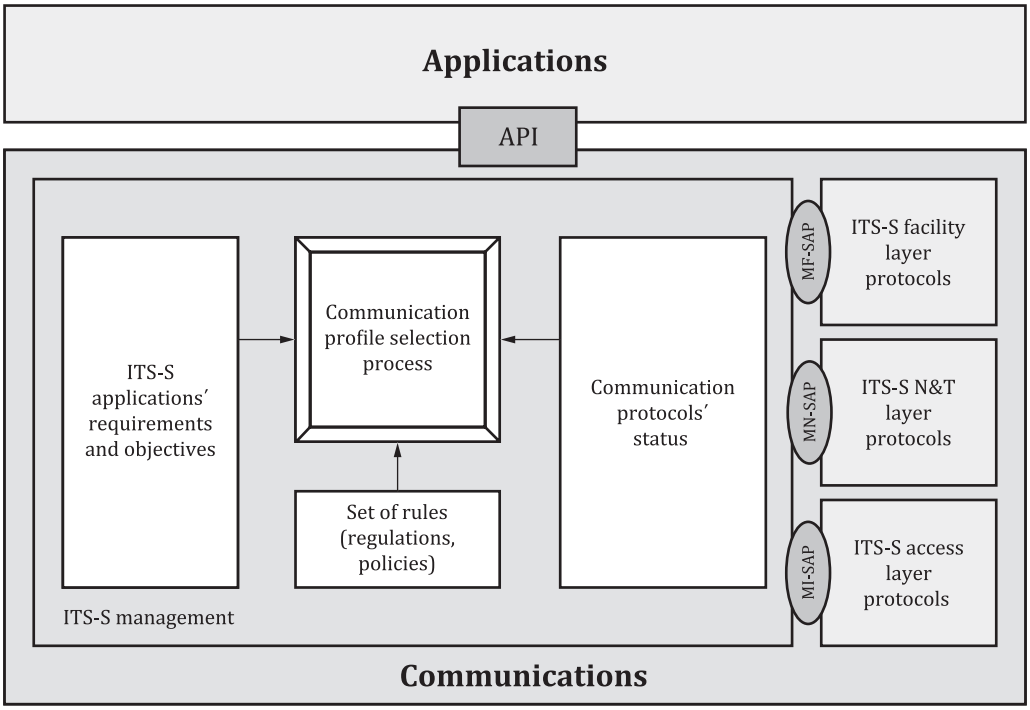


Figure 1 — ITS-S communication profile selection process

An ITS-S communication profile is independent of any destination address. However, an instantiation of a communication profile includes the address of the next hop recipient, and a path includes address information of the next hop recipient, the anchor and the destination, as specified in ISO 24102-6.

A user of an ITS station unit can influence the selection of ITS-S communication profiles by providing their own policies.

Information from a local dynamic map (LDM; see ISO 18750) on neighbouring stations offering certain communication capabilities can also be useful for the ITS-S communication profile selection process, although not indispensable.

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Intelligent transport systems — Application requirements and objectives

1 Scope

This document:

— specifies communication service parameters presented by ITS station (ITS-S) application processes to the ITS-S management in support of automatic selection of ITS-S communication profiles in an ITS station unit (ITS-SU);

— specifies related procedures for the static and dynamic ITS-S communication profile selection processes at a high functional level;

— provides an illustration of objectives used to estimate an optimum ITS-S communication profile.

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 4217, *Codes for the representation of currencies*

ISO 17419, *Intelligent transport systems — Globally unique identification*

ISO 21217, *Intelligent transport systems — Station and communication architecture*

ITU-T X.911, *Information technology — Open distributed processing — Reference model — Enterprise language*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17419, ISO 21217, ITU-T X.911 and the following apply.

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
ITS-S application process RX/TX interface
sink or source of an ITS-S application process

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