

English Version

Cooperative intelligent transport systems - Communication profiles

Systèmes intelligents de transport - Profils de
communication

Kooperative intelligent Verkehrssysteme -
Kommunikationsprofile

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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (CEN/TS 17496:2021) has been prepared by Technical Committee CEN/TC 278 “Intelligent transport systems”, the secretariat of which is held by NEN.

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Introduction

ITS Station Communication Profiles, see EN ISO 17423 and EN ISO 17419, used for communications between (trusted) devices simplify achieving

- interoperability between ITS station units,
- and portability of ITS applications (that provide the ITS services).

Examples of trusted devices, i.e. ITS-secured communication nodes, are ITS-station units specified in ISO 21217, which fully covers ETSI EN 302 665 [32]. Four implementation contexts of communication nodes in ITS communications networks are identified in ISO 21217, each comprised of ITS-station units taking on a particular role; personal, vehicular, roadside, or central. Such ITS station units participate in a wide variety of ITS services related to e.g. sustainability, road safety and transportation efficiency.

An ITS station unit can be composed of ITS station communication units from different vendors where each ITS station communication unit is linked to a different configuration and management centre specified in ISO 24102-2 [21] and EN ISO 17419. Station-internal management communications between ITS station communication units of the same ITS station unit is specified in ISO 24102-4 [22].

The identification of ITS station communication profiles specified in this document is generically applicable to all kind of communications including broadcast information dissemination and sessions, e.g. sessions between ITS station units, sessions between ITS station communication units of the same ITS station unit, sessions between roadside ITS station units and a cloud platform, and between vehicle ITS station units and a cloud platform, including communications sessions compatible with extended vehicles standards developed by ISO TC 22 (ISO 20077 series [12]).

1 Scope

This document specifies a methodology to define ITS-S communication profiles (ITS-SCPs) based on standardized communication protocols to interconnect trusted devices. These profiles enable secure information exchange between such trusted devices, including secure low-latency information exchange, in different configurations. The present document, in order to exemplify the methodology, also normatively specifies some ITS-SCPs based on the methodology, yet without the intent of covering all possible cases. Further ITS-SCPs can be specified at a later stage.

Configurations of trusted devices for which this document defines ITS-SCP's include:

- a) ITS station communication units (ITS-SCU) of the same ITS station unit (ITS-SU), i.e. station-internal communications;
- b) an ITS-SU and an external entity such as a sensor and control network (SCN), or a service in the Internet;
- c) ITS-SUs.

The specifications given in this document can be equally applied to secured and unsecured communications, being groupcast and unicast communications, being localized or networked 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.

EN ISO 17419, *Intelligent transport systems — Cooperative systems — Globally unique identification (ISO 17419)*

EN ISO 17423, *Intelligent transport systems — Cooperative systems — Application requirements and objectives (ISO 17423)*

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

ISO/IEC 8825-1, *Information technology — ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER) — Part 1:*