



SLOVENSKI STANDARD SIST-TS CEN ISO/TS 21184:2021

01-junij-2021

Kooperativni inteligentni transportni sistemi (C-ITS) - Okvir globalnega upravljanja podatkov o prometu (GTDM) (ISO/TS 21184:2021)

Cooperative intelligent transport systems (C-ITS) - Global transport data management (GTDM) framework (ISO/TS 21184:2021)

Intelligente Transportsysteme - Sichere Fahrzeugschnittstelle - Datenverzeichnis für C-ITS anwendungsrelevante Fahrzeuginformationen (ISO/TS 21184:2021)

Systèmes de transport intelligents - Interface véhicule sécurisée - Dictionnaire de données des informations embarquées pour applications C-ITS (ISO/TS 21184:2021)

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Ta slovenski standard je istoveten z: **CEN ISO/TS 21184:2021**

ICS:

03.220.01	Transport na splošno	Transport in general
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

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TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN ISO/TS 21184

March 2021

ICS 03.220.01; 35.240.60

English Version

**Cooperative intelligent transport systems (C-ITS) - Global
transport data management (GTDM) framework (ISO/TS
21184:2021)**

Systèmes de transport intelligents coopératifs (C-ITS) -
Cadre de gestion globale des données de transport
(GTDM) (ISO/TS 21184:2021)

Intelligente Transportsysteme - Sichere
Fahrzeugschnittstelle - Datenverzeichnis für C-ITS
anwendungsrelevante Fahrzeuginformationen (ISO/TS
21184:2021)

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European foreword

This document (CEN ISO/TS 21184:2021) has been prepared by Technical Committee ISO/TC 204 "Intelligent transport systems" in collaboration with Technical Committee CEN/TC 278 "Intelligent transport systems" the secretariat of which is held by NEN.

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TECHNICAL
SPECIFICATION

ISO/TS
21184

First edition
2021-03

**Cooperative intelligent transport
systems (C-ITS) — Global transport
data management (GTDM) framework**

*Systèmes de transport intelligents coopératifs (C-ITS) - Cadre de
gestion globale des données de transport (GTDM)*

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Reference number
ISO/TS 21184:2021(E)

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Published in Switzerland

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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.

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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).

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

This document is part of a family of deliverables from Standard Development Organizations (SDOs) for Cooperative Intelligent Transport Systems (C-ITS), which is a subset of standards for Intelligent Transport Systems (ITS).

ITS aims to improve surface transportation in terms of:

- **safety**
e.g. crash avoidance, obstacle detection, emergency calls, dangerous goods;
- **efficiency**
e.g. navigation, green wave, priority, lane access control, contextual speed limits, car sharing;
- **comfort**
e.g. telematics, parking, electric vehicle charging, infotainment; and
- **sustainability,**

by applying information and communication technologies (ICT).

The whole set of standards for deployment of C-ITS is difficult to understand for developers of equipment and software, especially ITS application software, and thus guidelines explaining a beneficial choice of standards (C-ITS release), the purpose and interaction of standardized features, beneficial implementation approaches, and guidance in developing ITS applications are a prerequisite for a fair and open market allowing early deployment of interoperable and future-proof solutions; see ISO/TR 21186-1. More details on the C-ITS domain can be found in the Brochure^[14] produced by CEN/TC 278.

Referencing other SDOs and their respective deliverables is in no way to be understood as an endorsement, but rather as an informative piece of information.

At the time of writing this document, no applicable Intellectual Property Rights (IPR) issues were known related to this document. However, this document references standards for which IPRs are known. Information on such IPRs is expected to be provided in those respective standards, which might be from any one of the SDOs working on ITS or C-ITS.

Cooperative intelligent transport systems (C-ITS) — Global transport data management (GTDM) framework

1 Scope

This document specifies a global transport data management (GTDM) framework composed of

- global transport basic data model,
- global transport access control data model,
- global transport function monitor data model, and
- sensor and control network data model

to support data exchange between applications.

This document defines standardized data classes in a Global Transport Data Format (GTDF), and the means to manage them.

Application and role-based access control to resources in GTDF are specified in accordance with IEEE 1609.2 certificates.

This document specifies GTDM as an ITS-S capability which is an optional feature (ITS-capabilities are specified in ISO 24102-6).

The GT access control (GTAC) data model specifies access permissions to data and function control by defining role-based mechanisms.

The GT function monitor (GTFM) data model specifies a configuration method to generate a flow logic for monitoring purposes, e.g. observing data parameters with respect of a defined limit.

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 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation — Part 1:*

ISO/IEC 8825-7, *Information technology — ASN.1 encoding rules — Part 7: Specification of Octet Encoding Rules (OER)*

ISO 14229-1, *Road vehicles — Unified diagnostic services (UDS) — Part 1: Application layer*

ISO/TS 17429, *Intelligent transport systems — Cooperative ITS — ITS station facilities for the transfer of information between ITS stations*

ISO/TS 21177, *Intelligent transport systems — ITS station security services for secure session establishment and authentication between trusted devices*

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

ISO 22900-2, *Road vehicles — Modular vehicle communication interface (MVICI) — Part 2: Diagnostic protocol data unit (D-PDU API)*

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ISO 24102-6, *Intelligent transport systems — Communications access for land mobiles (CALM) — ITS station management — Part 6: Path and flow management*

CEN/TS 17496, *Cooperative intelligent transport systems — Communication profiles*

IEEE 1609.2, *IEEE Standard for Wireless Access in Vehicular Environments — Security Services for Applications and Management Messages*

RFC 5646, *Tags for Identifying Languages*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 21177, CEN/TS 17496, ISO 21217 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
class
<class>
an extensible programme-code-template for creating objects, providing initial values for state (member variables) and implementations of behaviour (member functions or methods) in object-oriented programming

3.2
convention
Cvt
indicates if specification is "M" (mandatory), "O" (optional), or "C" (conditional)

3.3
global transport protocol client
GTP client
entity that instigates the provision of the GTP service

3.4
global transport protocol server
GTP server
entity that provides the GTP service

3.5
raw data
data of a sensor control network (SCN) in the untreated format as specified by the SCN owner

3.6
raw data source identifier
unique identifier of an entity in an SCN (3.9)

3.7
retrofit
addition of new technology or features to existing systems

3.8
secure data interface
SDI
gateway providing bidirectional means for security and access control

3.9**sensor control network****SCN**

communication bus with measured inputs and controlled outputs

4 Abbreviated terms

ADU	application data unit
AMQP	advanced message queuing protocol
ASN.1	abstract syntax notation one
BP	basic principle
CAN	controller area network
cid	common identifier
C-ITS-SU	central ITS station unit
C-ITS-S	central ITS station
CUP	CAN utility protocol
Cvt	convention
dId	data identifier
D-PDU	diagnostic protocol data unit
dpId	data parameter identifier
DTC	diagnostic trouble code
eCall	emergency call
ECU	electronic control unit
ecuId	electronic control unit identifier
enh-diag	enhanced diagnostic
FSH	facilities service handler
GNSS	global navigation satellite system
GPIO	general purpose input/output
GT	global transport
GTAC	global transport access control
GTBasic	global transport basic
GTDF	global transport data format
GTDM	global transport data management
GTDF2SCNPDU	global transport data format to sensor control network protocol data unit