
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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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.

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).

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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.

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 (MVIC) — Part 2: Diagnostic protocol data unit (D-PDU API)*