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Cooperative intelligent transport systems (C-ITS) - Guidelines on the usage of standards

Part 1: Standardization landscape and releases

bsi.

National foreword

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European foreword

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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).

A list of all parts in the ISO 21186 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.

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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;

— **sustainability**

by applying information and communication technologies (ICT).

The whole set of standards for deployment of C-ITS is difficult to understand by 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.

The ISO 21186 series provides necessary guidelines in multiple parts, each dedicated to a specific purpose:

— Part 1: Standardization landscape and releases (this document);

— Part 2: Hybrid communications[32];

— Part 3: Security[33].

This document can be complemented by further parts as required, for example:

— Usage of the service announcement protocol specified, for example, in ISO 22418;

— Dynamically extendable data and protocol parameters ("Information Object Classes" and "Information Object Sets"; based on ASN.1 type CLASS);

— Usage of the GTDM framework specified in ISO/TS 21184.

For deployment of ITS, especially C-ITS and the emerging Urban ITS and "Mobility as a Service" (MaaS) paradigms, consistent and complete sets of standards and profiles of standards including necessary parameterization are necessary in support of the targeted ITS services to be provided by means of ITS applications. Such sets are referred to as "C-ITS Release". This document presents the C-ITS standards landscape, describes a concept of Releases and exemplifies this concept with a "C-ITS Release 2".

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 Standards Development Organisations working on ITS or C-ITS.

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.

More details on the C-ITS domain can be found in the Brochure cited in Reference [129].

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TECHNICAL REPORT **ISO/TR 21186-1:2021(E)**

Cooperative intelligent transport systems (C-ITS) — Guidelines on the usage of standards —

Part 1: Standardization landscape and releases

1 Scope

This document

— describes standardization activities related to C-ITS on a global level by major standard development organizations (SDOs);

— explains the various purposes of deliverables from SDOs and introduces a classification scheme of such documents;

— describes methods on how C-ITS services are presented and performed;

— identifies an approach for C-ITS releases and exemplifies this approach;

— presents a list of standards (Bibliography) with special relevance for C-ITS.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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/

NOTE An approach towards a common vocabulary in ITS is presented in ISO/TS 14812[1)].

4 Standardization at SDOs

4.1 General

Standardization in general is the process of generating specifications by a recognized authority, i.e. an SDO, applying the principle of consensus finding prior to formal approval by voting according to the rules of the SDOs.

Regulatory requirements complement standards and specifications and should be considered for the deployment of equipment and the operation of services in the given regulatory domain.

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