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Intelligent transport systems — Vehicle interface for provisioning and support of ITS services —

Part 2: Unified gateway protocol (UGP) requirements and specification for vehicle ITS station gateway (V-ITS-SG) interface

Systèmes intelligents de transport — Interface véhicule pour la fourniture et le support de services ITS —

Partie 2: Exigences de protocole et spécification pour l'interface passerelle de la station ITS du véhicule

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 204, *Intelligent transport systems*.

ISO 13185 consists of the following parts, under the general title *Intelligent transport systems (ITS) — Vehicle interface for provisioning and support of ITS services*:

— *Part 1: General information and use case definition*

— *Part 2: Unified gateway protocol (UGP) requirements and specification for vehicle ITS station gateway (V-ITS-SG) interface*

The following parts are under preparation:

— *Part 3: Unified gateway protocol (UGP) server and client API specification*

— *Part 4: Unified gateway protocol (UGP) conformance test specification*

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Introduction

This part of ISO 13185 has been established to define the requirements of a common software interface to a vehicle gateway to easily exchange vehicle information data amongst nomadic and/or mobile device, vehicle gateway, and the vehicle's Electronic Control Units (ECUs).

Applications supporting service provision use via nomadic and mobile devices need vehicle information data through an in-vehicle interface access method, as well as the harmonization of existing standards to support a single vehicle data access solution.

This document defines an ASN.1-based protocol between the nomadic and/or mobile device (ND) and the UGP Server (implemented in the V-ITS-SG) in the vehicle.

To achieve this, it is based on the Open Systems Interconnection (OSI) Basic Reference Model specified in ISO/IEC 7498-1 and ISO/IEC 10731, which structures communication systems into seven layers.

This part of ISO 13185 can be used by vehicle manufacturers for future vehicle design to support the design of vehicle gateways to interface with NDs.

The ND applications need vehicle information data through an in-vehicle interface access method (V-ITS-S with V-ITS-SG).

This part of ISO 13185 supports ITS applications which are based on ND in vehicles to operate on a common software interface to a V-ITS-SG to easily exchange vehicle information data among ND, vehicle V-ITS-SG, and ECUs.

The protocol implementation in the vehicle gateway features the following:

— the deny of access to the vehicle gateway data by unauthorized on-board and off-board test equipment;

— the deny of access to parts of the vehicle gateway data by unauthorized on-board and off-board test equipment (privacy);

— the identification of the vehicle gateway and the vehicle it is installed in;

— the list of in-vehicle connected ECUs to the vehicle gateway and their data parameters;

— methods to configure the access to vehicle data.

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Intelligent transport systems — Vehicle interface for provisioning and support of ITS services —

Part 2:
Unified gateway protocol (UGP) requirements and specification for vehicle ITS station gateway (V-ITS-SG) interface

1 Scope

This part of ISO 13185 specifies the requirements of an ASN.1-based protocol between a vehicle-ITS-Station Gateway (V-ITS-SG) and a nomadic and/or mobile device (ND) to easily exchange vehicle information data.

The ASN.1-based protocol has been specified to support a wired or wireless connection between the ND and V-ITS-SG.

The Unified Gateway Protocol (UGP) is used between the V-ITS-SG and the ND. UGP supports several features in order to provide

— authorization (data privacy),

— secured access,

— V-ITS-SG and in-vehicle ECUs identification,

— real-time vehicle data parameters with identifier and type information in ASN.1 format, and

— enhanced vehicle data parameters with identifier and type information in ASN.1 format.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 13185–1, *Intelligent transport systems — Vehicle interface for provisioning and support of ITS services — Part 1: General information and use case definition*

ISO 14229-2, *Road vehicles — Unified diagnostic services (UDS) — Part 2: Session layer services*

3 Terms, definitions, symbols, and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 13185–1 and the following apply.

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