PD ISO/TR 13185-1:2012

BSI Standards Publication

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

Part 1: General information and use case definition

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National foreword

This Published Document is the UK implementation of ISO/TR 13185-1:2012.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Road transport informatics.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

ISBN 978 0 580 81866 0

ICS 03.220.01; 35.240.60

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 January 2013.

Amendments issued since publication

Date	Text affected

PD ISO/TR 13185-1:2012

TECHNICAL REPORT

ISO/TR 13185-1

First edition
2012-05-15

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

Part 1: General information and use case definition

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

Partie 1: Informations générales et définition des cas d'utilisation

Reference number
ISO/TR 13185-1:2012(E)

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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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TR 13185-1 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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

— Part 1: *General information and use case definition* [Technical Report]

— Part 2: *Protocol requirements and specification for vehicle ITS station gateway (V-ITS-SG) interface*[1)]

— Part 3: *Configuration process requirements and specification for vehicle ITS station gateway (V-ITS-SG)*[2)]

The following document is under development:

— Part 4: *Protocol conformance test cases for vehicle ITS station gateway (V-ITS-SG) interface*

1) To be published.

2) To be published.

Introduction

This part of ISO 13185 specifies the requirements for a common software interface to a vehicle gateway to easily exchange vehicle information data among nomadic and/or mobile device, vehicle gateway and the vehicle's ECUs.

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

This document defines a vehicle data transfer protocol between vehicle gateway also called V-ITS-SG and the nomadic and/or mobile device (ND).

This part of ISO 13185 may be used by vehicle manufacturers for future vehicle design to support the design of ITS/Telematics and as a retrofit equipment for aftersales vehicles.

Applications supporting ITS service provision and multimedia use via ND may be implemented using vehicle information, driver advisory, warning systems and entertainment systems. The following standards are subject to analysis in regard to their applicability to supporting ITS service provision and multimedia use via nomadic and mobile device.

— ISO 15031 defines emissions-related diagnostic data supported by vehicles in all countries requiring OBD compliance.

— ISO 27145 WWH-OBD defines diagnostic data (emissions-related systems, future safety related systems, etc.) to be supported by vehicles in all countries implementing the GTR (Global Technical Regulation) into their local legislation.

— ISO 22900-2 defines the Modular Vehicle Communication Interface (MVCI) D-PDU API to separate the protocol data unit (PDU) from the vehicle specific protocols.

— ISO 22901 defines the Open Diagnostic data eXchange (ODX) format which is a standard for describing diagnostic related ECU data. This International Standard is becoming the vehicle manufacturer's choice to document vehicle system diagnostic data and protocol information.

— ISO 22902 is a multimedia and telematics standard based on the AMI-C specification and reference documents for automotive industry. The important logical element of the architecture is a vehicle interface.

— ISO 22837 defines the reference architecture for probe vehicle systems and a basic data framework for probe data.

— ISO/TS 29284 defines the standardization of information, communication and control systems in the field of urban and rural surface transportation, including intermodal and multimodal aspects thereof, traveller information, traffic management, public transport, commercial transport, emergency services and commercial services in the ITS field.

— SAE J2534 defines a standardized system for programming of ECUs in a vehicle.

— SAE J2735 defines the support of interoperability among DSRC applications through the use of standardized message sets, data frames and data elements.

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 integrated within the CALM architecture and easily exchange vehicle information data among ND, V-ITS-SG and ECUs.

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

Part 1: General information and use case definition

1 Scope

This part of ISO 13185 specifies the communications architecture and generic protocol to provide and maintain ITS services to travellers (including drivers, passengers and pedestrians), using nomadic and portable devices for:

— The mobile device as a mobile router,

— Augmentation of the capabilities of a nomadic device using information from in-vehicle systems,

— Nomadic device acting as a key to personalise the vehicle configuration,

— Using capabilities of a nomadic or mobile device to augment functionality within the vehicle,

— The use of portable nomadic devices within commercial vehicles and public transport,

— Optimising the use of the capabilities in nomadic and mobile devices in the provision of ITS services,

— Harmonization of existing standards to support a single solution access method,

— Applications supporting ITS service provision and multimedia use a common access method to retrieve vehicle data through a vehicle communication interface.

2 Normative references

The following referenced documents are indispensable for the application 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 10731:1994, *Information technology — Open Systems Interconnection — Basic Reference Model — Conventions for the definition of OSI services*

ISO 15031 (all parts), *Road vehicles — Communication between vehicle and external equipment for emissions-related diagnostics*

ISO/IEC 15118-1[3], *Road vehicles — Vehicle to grid communication interface — Part 1: General information and use case definition*

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

ISO 22837, *Vehicle probe data for wide area communications*

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

ISO 22901 (all parts), *Road vehicles — Open diagnostic data exchange (ODX)*

ISO 22902-5, *Road vehicles — Automotive multimedia interface — Part 5: Common message set*

3) To be published.