PD ISO/TS 29284:2012

BSI Standards Publication

Intelligent transport systems — Event-based probe vehicle data

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National foreword

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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.

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ISBN 978 0 580 82809 6

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 30 April 2013.

Amendments issued since publication

Date	Text affected

PD ISO/TS 29284:2012

TECHNICAL SPECIFICATION

ISO/TS 29284

First edition
2012-12-15

Intelligent transport systems — Event-based probe vehicle data

Systèmes intelligents de transport — Données de sonde du véhicule basées sur les événements

Reference number
ISO/TS 29284:2012(E)

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Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
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Published in Switzerland

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Foreword

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ISO/TS 29284 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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Introduction

Probe vehicle systems are being investigated and deployed throughout the world. It is expected that the number of practical systems will grow steadily over the next few years. In TC 204/SWG 16.3, probe vehicle systems and probe data have been examined, and it is concluded that in many cases communications airtime will be a scarce and expensive commodity, and therefore efficient probe data reporting systems which rely on techniques to use airtime efficiently and economically are essential. One way to accomplish this is to shift data aggregation tasks in to the probe vehicle itself. Vehicles that feature this advanced form of on board probe data processing will report information based on the occurrence of actual events as opposed to delivering a constant stream of raw vehicle probe data. Event-based probe data reporting will allow economic use of communication capacity.

As probe vehicle systems have to collect and manage probe data from a variety of vehicles from different vehicle manufacturers, the standardization of these event-based messages is essential. To do this, a common framework for event-based probe vehicle message reporting is also required.

The purpose of this project is to develop (1) a reference architecture for event-based probe data reporting within an architecture which encompasses both this function and standard probe data reporting defined in ISO 22837; (2) the basic data framework for defining event-based probe data messages; and (3) the concrete definition of these messages.

The benefits of this standardization include:

— It helps system developers and operators to specify efficient probe data collection and processing systems. It also promotes communication and mutual understanding among the developers and the operators of probe systems.

— It helps system developers who are developing probe vehicle systems to define a key tool for communications-efficient probe data systems, i.e. event-based probe data reporting.

— Probe data may be collected from various vehicles of different vehicle manufacturers. It provides a common framework for handling event-based probe data.

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Intelligent transport systems — Event-based probe vehicle data

1 Scope

This Technical Specification specifies:

— reference architecture for event-based probe vehicles which encompasses event-based probe data and standard probe data elements (ISO 22837:2009);

— basic data framework of event-based probe data reporting, based on ISO 22837:2009;

— the definition of an initial set of event-based probe data elements. These elements will be commonly used in typical event-based probe data enabled application domains, such as traffic, weather, and safety. Standardizing these event-based probe data elements facilitates the development of probe vehicle systems and the distribution of probe data. This is not intended to be an exhaustive listing of event-based probe data probe data elements.

This Technical Report provides a common framework for defining event-based probe data messages to facilitate the specification and design of probe vehicle systems.

It provides concrete definitions of event-based probe data elements.

It serves as a supplement to ISO 22837:2009, and specifies additional normative data (probe data elements) that are delivered by an event-based probe data system.

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 22837:2009, *Vehicle probe data for wide area communications*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
probe vehicle system
system consisting of vehicles which collect and transmit probe data and land-based centres which collate and process data from many vehicles to build an accurate understanding of the overall roadway and driving environment

[ISO 22837:2009, 4.1]

3.2
vehicle sensor
device within a vehicle that senses conditions inside and/or outside the vehicle or that detects actions that the driver takes

[ISO 22837:2009, 4.2]

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