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## Intelligent transport systems — Service architecture of probe vehicle systems

*Systèmes intelligents de transport — Architecture de services des systèmes de véhicules traceurs*



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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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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](http://www.iso.org/members.html).

## Introduction

More and more attention has been paid to safety, comfort, mitigation of impacts on the environment, and energy efficiency in transport systems. The use of probe data (specified in ISO 22837) is considered to be a key factor of a solution for the above issues.

This document defines a service architecture of probe vehicle systems (PVS). PVS functionalities can be implemented in an ITS station unit specified in ISO 21217 applying applicable protocols specified in other standards. Examples of applicable protocols are the local dynamic map specified in ISO 18750 and generic ITS station facilities layer services specified in ISO/TS 17429. The service architecture classifies ITS services which using PVS. This classification defines service domains for cooperation between PVS.

This document does not prescribe a physical communication medium for transmitting data/information to or from vehicles. This document is intended to be independent of any particular communication medium and to be compatible with any medium that is selected by system developers.

This document focuses on services that can be developed using public sector probe data that are generated by vehicles. The private sector can offer additional applications that require sign-in and identification; however, this document focuses on public sector applications that can be developed using anonymous probe data (specified in ISO 24100).

This document is an extension towards more general and global applicability of FHWA-JPO-13-091.



# Intelligent transport systems — Service architecture of probe vehicle systems

## 1 Scope

This document specifies a service architecture that defines the framework and domain for classification of probe vehicle systems (PVS), which are systems that collect probe data from private vehicles and that process the probe data statistically towards useful information that finally can be provided to end users.

This document focuses on services that can be developed using public sector probe data that are generated by vehicles. It specifies the following items related to PVS:

- service framework of probe vehicle systems;
- definition of service domain of PVS.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

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/>

### 3.1

#### **personally identifiable information**

information that can be used in a given context to identify, contact, or locate a single person, or to identify an individual in context

## 4 Abbreviated terms

DSRC	dedicated short range communications
IPR	intellectual property rights
PII	personally identifiable information
PVS	probe vehicle system
V2I	vehicle-to-infrastructure (communications)
V2V	vehicle-to-vehicle (communications)
Wi-Fi	wireless fidelity