TECHNICAL REPORT

ISO/TR 4286

Intelligent transport systems — Use cases for sharing of probe data

Systèmes de transport intelligents — Cas d'usages pour le partage des données de sondage

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Foreword

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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.

Introduction

When discussing transportation systems, much attention has been paid to safety, comfort, impacts on the environment and energy efficiency. The use of probe data (specified in ISO 22837) is a key factor in dealing with the above issues.

Probe vehicle data are collected through various vehicles in an ITS system, but the data are typically used only for a specific application by the service provider. To boost efficiency, it is recommended that the vehicle probe data be shared by various service applications through common databases.

Current probe vehicle systems collect and use data, but do not share data with other ITS service applications. Vehicle probe data are valuable for all related services and limiting the use of such data to within one service only ought to be avoided for efficient data use. Sharing probe data among service providers enhances quality of service, as the probe data collected through the sensors and other sources can be utilized by other service providers.

As an example, shared common database can be used for new services, such as an advanced notification safety information provision service, by utilizing roadside sensor data collected by a road authority. Many other new services can be added as the number of CAV (connected and automated vehicle) increases.

This document describes probe data sharing use cases so that additional service can be developed by sharing probe data collected by various probe vehicle systems.

The functionalities of a probe vehicle system (PVS) can be implemented in an ITS station unit according to ISO 21217 and support application protocols specified in other standards. Examples of such protocols are the local dynamic map (LDM) specified in ISO/TS 18750, and generic ITS station facilities layer services specified in ISO/TS 17429. The service architecture classifies ITS services including PVS, and this classification also defines service domains for cooperation between PVSs.

It is noted that 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 communication medium and to be compatible with any medium that is selected by the system developers.

In addition, this document focuses only on the framework for vehicle probe data sharing use cases.