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Intelligent transport systems — Extension of map database specifications for applications of cooperative ITS

Systèmes intelligents de transport — Extension des spécifications de base de données cartographiques aux applications collaboratives des SIT

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Foreword

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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*.

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Introduction

The purpose of this International Standard is to extend the existing specifications for map databases in order to provide greater support for applications and/or application developments of cooperative ITS that may use Local Dynamic Map.

The functional requirements and data model for in-vehicle navigation are already defined in ISO/TS 20452. However, the map-related functional requirements, data model, and data elements needed for Local Dynamic Map for Cooperative ITS have not yet been defined.

This International Standard can help developers of applications for Cooperative ITS by broadening its applicability. Such applications will benefit by the availability of a standardized data model and data elements. The resulting work will shorten developers' time-to-market for new products and services.

In order to meet the schedule requirements of Mandate M/453 "Standardisation mandate addressed to CEN, CENELEC and ETSI in the field of Information and Communication Technologies to support the interoperability of Co-operative systems for Intelligent Transport in the European Community" issued by the European Commission, ISO/TS 17931 was published as the Local Dynamic Map component of this International Standard.

This International Standard includes all of the contents of ISO/TS 17931.

This International Standard defines the Logical Data Model for Multi-Modal navigation system. It does not define the data model for individual navigation service except for in-vehicle navigation.

This International Standard uses UML to express specific circumstances; the graphical elements are used to express specific constraints and structural relationships. A full definition can be found in ISO/IEC 19501:2005. However, a short introduction of elements is given in Annex B.

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Intelligent transport systems — Extension of map database specifications for applications of cooperative ITS

1 Scope

This International Standard provides the map-related functional requirements, data model (logical data model/logical data organization), and data elements for those applications of cooperative ITS that require information derived from map databases.

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 14825:2011, *Intelligent transport systems — Geographic Data Files (GDF) — GDF5.0*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

ISO/TS 20452:2007, *Requirements and Logical Data Model for a Physical Storage Format (PSF) and an Application Program Interface (API) and Logical Data Organization for PSF used in Intelligent Transport Systems (ITS) Database Technology*

3 Conformance

Data structures shall be provided as specified in Clause 7.

Any data structure claiming conformance with this International Standard shall pass the requirements presented in the abstract test suite in Annex A.

UML Expressions for diagrams in this International Standard shall be compliant with ISO/IEC 19501:2005.

4 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 14825 and ISO/TS 20452 and the following apply.

4.1
Address Location
application category that deals with the task of expressing a real-world position in terms of the PSF data representation

4.2
application category
basic sub-function within the set of functionality for cooperative ITS support

Note 1 to entry: This International Standard identifies eight application categories: Positioning, Route Planning, Route Guidance, Map Display, Address Location, Services and POI Information Access, cooperative ITS including Driving support, Multi-Modal Travel.

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