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Intelligent transport systems (ITS) — Location referencing for geographic databases —

Part 3: Dynamic location references (dynamic profile)

Systèmes intelligents de transport (SIT) — Localisation pour bases de données géographiques —

Partie 3: Localisations dynamiques (profil dynamique)

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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).

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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*.

This second edition cancels and replaces the first edition (ISO 17572-3:2008), which has been technically revised. It also incorporates Technical Corrigendum ISO 17572-3:2008/Cor1:2009.

ISO 17572 consists of the following parts, under the general title *Intelligent transport systems (ITS) — Location referencing for geographic databases*:

— *Part 1: General requirements and conceptual model*

— *Part 2: Pre-coded location references (pre-coded profile)*

— *Part 3: Dynamic location references (dynamic profile)*

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Introduction

A location reference (LR) is a unique identification of a geographic object. In a digital world, a real-world geographic object can be represented by a feature in a geographic database. An example of a commonly known location reference is a postal address of a house. Examples of object instances include a particular exit ramp on a particular motorway, a road junction, or a hotel. For efficiency reasons, location references are often coded. This is especially significant if the location reference is used to define the location for information about various objects between different systems. For intelligent transport systems (ITS), many different types of real-world objects will be addressed. Amongst these, location referencing of the road network, or components thereof, is a particular focus.

Communication of a location reference for specific geographic phenomena, corresponding to objects in geographic databases, in a standard, unambiguous manner is a vital part of an integrated ITS system, in which different applications and sources of geographic data will be used. Location referencing methods (LRMs, methods of referencing object instances) differ by applications, by the data model used to create the database, or by the enforced object referencing imposed by the specific mapping system used to create and store the database. A standard location referencing method allows for a common and unambiguous identification of object instances representing the same geographic phenomena in different geographic databases produced by different vendors, for varied applications, and operating on multiple hardware/software platforms. If ITS applications using digital map databases are to become widespread, data reference across various applications and systems has to be possible. Information prepared on one system, such as traffic messages, has to be interpretable by all receiving systems. A standard method to refer to specific object instances is essential to achieving such objectives.

Japan, Korea, Australia, Canada, the US, and European ITS bodies are all supporting activities of location referencing. Japan has developed a Link Specification for VICS. In Europe, the RDS-TMC traffic messaging system has been developed. In addition, methods have been developed and refined in the EVIDENCE and AGORA projects based on intersections identified by geographic coordinates and other intersection descriptors. After the publication of the first edition of this International Standard in 2008, TPEG had changed to TPEG2. Modifications related to this change are captured in this second edition. In the US, standards for location referencing have been developed to accommodate several different location referencing methods.

This International Standard provides specifications for location referencing for ITS systems (although other committees or standardization bodies can subsequently consider extending it to a more generic context). In addition, this version does not deal with public transport location referencing; this issue will be dealt with in a later version.

The International Organization for Standardization (ISO) draws attention to the fact that it is claimed that compliance with this part of ISO 17572 can involve the use of a patent concerning procedures, methods and/or formats given in this part of ISO 17572 in Clauses 8 and 9 and Annexes A, B, and C.

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Intelligent transport systems (ITS) — Location referencing for geographic databases —

Part 3:
Dynamic location references (dynamic profile)

1 Scope

This International Standard specifies location referencing methods (LRMs) that describe locations in the context of geographic databases and will be used to locate transport-related phenomena in an encoder system as well as in the decoder side. This International Standard defines what is meant by such objects and describes the reference in detail, including whether or not components of the reference are mandatory or optional, and their characteristics.

This International Standard specifies two different LRMs:

— pre-coded location references (pre-coded profile);

— dynamic location references (dynamic profile).

This International Standard does not define a physical format for implementing the LRM. However, the requirements for physical formats are defined.

This International Standard does not define details of the location referencing system (LRS), i.e. how the LRMs are to be implemented in software, hardware, or processes.

This part of ISO 17572 specifies the dynamic location referencing method, comprising

— attributes and encoding rules

— logical data modelling

— TPEG physical format specification for dynamic location references,

— coding guidelines for dynamic location references;

— compressed data format specification.

It is consistent with other International Standards developed by ISO/TC 204 such as ISO 14825.

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 17572-1, *Intelligent transport systems (ITS) — Location referencing for geographic databases — Part 1: General requirements and conceptual model*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17572-1 and the following apply.

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