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Intelligent transport systems — ITS central data dictionaries —

Part 1: Requirements for ITS data definitions

Systèmes intelligents de transport — Dictionnaires de données centrales des ITS —

Partie 1: Exigences pour les définitions des données des ITS

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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).

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).

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 first edition of ISO 14817-1, together with ISO 14817-2, cancels and replaces ISO 14817:2002, which has been technically revised.

ISO 14817 consists of the following parts, under the general title *Intelligent transport systems — ITS data dictionaries*:

— *Part 1: Requirements for ITS data definitions*

— *Part 2: Governance of the Central ITS Data Concept Registry*

— *Part 3: Object identifier assignments for ITS data concepts*

Introduction

Background

This International Standard has been developed by ISO TC 204, in order to provide a framework for the documentation and registration of data that passes through system interfaces within the intelligent transport systems (ITS) domain. It is designed to maximize interoperability and facilitate information re-use across system interfaces.

Vision statement

This International Standard envisions a harmonized approach to ITS data concepts to promote maximum interoperability of data within the ITS sector by the creation and maintenance of the "Central ITS Data Concept Registry" (CIDCR), supported by interface and application specific ITS data dictionaries, created and maintained in a common and interoperable form, and to ensure the minimization of duplication by clear rules for data concept definition and data concept registry management.

Mission statement

The mission is to develop tools that will promote a holistic, integrated approach involving vehicle technology, infrastructure, and the road user to increase transport safety and efficiency. Specifically, this International Standard defines the principles and concepts; scope; field of application; rules and procedures; definition and concept of operation for the CIDCR and ITS functional data dictionaries; and makes provision for the migration of data concepts from ITS functional data dictionaries to the CIDCR so as to maximize interoperability and minimize proliferation of similar (but inconsistently defined) data concept entries.

This International Standard defines the framework, formats, and procedures used to define information and information exchanges within the ITS sector. This International Standard is designed to be used by the ITS community at large, but should be of special interest to application developers, equipment providers, and data concept registry managers.

This International Standard specifies a set of meta-attributes for ITS data concepts, as well as associated conventions and schemes that enable the description, standardization and management of all exchanged ITS data. Through consistent use of these common structures and associated conventions and schemes, interchange of data and information among the various ITS functional subsystems via their specific application systems can be maximized. This International Standard also supports re-use of data elements and other data concepts across various ITS functional subsystems and their specific application systems.

The formats and processes defined within this International Standard are consistent with implementation(s) of the ISO ITS System Architecture defined in the ISO 14813 Standardization deliverables, particularly ISO 14813-2 and ISO 14813-3. This does not preclude the application of data concept registries using alternative international, regional or national system architecture methodologies or techniques, indeed, common formats and processes will ease migration and interoperability between such approaches.

The ITS data concepts that populate the CIDCR or data dictionary may originate from a Computer-Aided Software Engineering (CASE) tool implementation of the ISO 14813 ITS Reference Architecture, from International Standards for ITS, from national implementations for ITS, or from the submission by relevant users. Data dictionary entries are not limited to those generated by object oriented methodologies.

Document overview

This clause provides an overview of this International Standard. Clause 1 identifies the scope of this part of ISO 14817. Clause 2 identifies requirements for conformance to this part of ISO 14817. Clause 3 identifies references required for proper implementation of this part of ISO 14817. Clause 4 defines terms used in this part of ISO 14817 and Clause 5 lists the abbreviations.

Clause 6 declares the fundamental ITS data concepts and Clause 7 identifies meta-attributes used to document the data concepts declared in Clause 6.

Annex A prescribes which meta-attributes are required for each type of data concept. Annex B specifies the naming conventions and the process for converting among various naming conventions (e.g. between the ITS descriptive name and the ASN.1 name). Annex C contains a listing of preferred data concepts within the ITS domain. Annex D contains the rules for representing data in a data model, along with examples.

The Bibliography includes a list of documents related to this International Standard.

Other parts

ISO 14817-2 defines the operation of the Central ITS Data Concept Registry (CIDCR). ISO 14817-3 specifies how to assign object identifiers.