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Transport information and control systems — Requirements for an ITS/TICS central Data Registry and ITS/TICS Data Dictionaries

Systèmes d'information et de commande des transports — Exigences pour un registre de données central ITS/TICS et pour les dictionnaires de données ITS/TICS

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 14817 was prepared by Technical Committee ISO/TC 204, *Transport information and control systems*.

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Introduction

0.1 Background

This International Standard has been developed by ISO/TC 204/WG 1, *Architecture*, in order to provide a framework for the documentation and registration of data that passes through system interfaces within the Intelligent Transport System / Transport Information and Control Systems (ITS/TICS) domain.

The International Standard is designed to maximize interoperability and facilitate information reuse.

This International Standard defines the registration process for ITS/TICS. It further defines the Data Dictionary and the Data Registry content and Data Registry management procedures.

Vision statement

> This International Standard envisions common use and maximum interoperability of data within the ITS/TICS sector by the creation and maintenance of an ITS/TICS Data Registry, supported by interface and application specific ITS/TICS 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 Registry management.

Mission statement

> The mission is to develop a standard to define the principles and concepts; scope; field of application; rules and procedures; definition and concept of operation for a central ITS/TICS Data Registry and ITS/TICS functional Data Dictionaries; and to make provision for the migration of data from ITS/TICS functional Data Dictionaries to the central Registry so as to maximize interoperability and minimize proliferation of similar (but inconsistently defined) data entries.

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

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

The Data Registry process defined within this International Standard is consistent with implementation(s) of the ISO ITS/TICS System Architecture defined in the ISO 14813 Standardization deliverables, particularly ISO 14813 Parts 2 and 3. This does not preclude the application of the Data Registry using alternative International, Regional or National System Architecture methodologies or techniques, indeed, a common Data Registry will ease migration and interoperability between such approaches.

The ITS/TICS data concepts that populate the ITS/TICS Data Registry may originate from a Computer-Aided Software Engineering (CASE) tool implementation of the ISO 14813 TICS 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.

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0.2 Document overview

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

The requirements for the ITS/TICS central Data Registry and ITS/TICS Data Dictionaries begin in Clause 6 with an overview of the concept of operations for the ITS/TICS Data Registry and ITS/TICS Data Dictionaries. A framework describing the registration of different types of data concepts in the ITS/TICS Data Registry and the registration status levels are presented.

Clause 7 identifies the fundamental ITS/TICS data concepts while Clause 8 identifies the basic and administrative meta attributes used to document them. Clause 9 describes the naming conventions and name abbreviation conventions used. Clause 10 states the requirements for the data concepts and the meta attributes contained in the ITS/TICS Data Registry and ITS/TICS Data Dictionaries.

Clause 11 provides a reference model for national, regional and international relationships and summarizes internationalization aspects associated with national and regional requirements for the ITS/TICS Data Registry and Data Dictionary environment.

The annexes to this International Standard describe the specific details for implementing the requirements introduced in Clauses 6 through 11. Annex A details ITS/TICS functional operating procedures for registration and harmonization of data concepts. Annex B prescribes the detailed definitions and descriptions of the ITS/TICS Data Registry and Data Dictionary meta attributes. Annex C prescribes the meta attribute requirements for data concepts contained in the ITS/TICS Data Registry and ITS/TICS Data Dictionaries. Annex D specifies the naming and name abbreviation conventions and the process for converting ITS/TICS descriptive names to ASN.1 names. Annex E contains the rules for data representation in an information model, along with examples. Annex F describes the ASN.1 information object specification for an ITS/TICS data concept with examples.

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

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