
Intelligent transport systems — Systems architecture — Harmonization of ITS data concepts

Systèmes intelligents de transport — Architecture des systèmes — Harmonisation des concepts de données SIT



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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.

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In exceptional circumstances, when a technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide by a simple majority vote of its participating members to publish a Technical Report. A Technical Report is entirely informative in nature and does not have to be reviewed until the data it provides are considered to be no longer valid or useful.

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Introduction

The objective of this Technical Report is to provide user guidance for the harmonization of data concepts where there are similarities in definitions, including semantics.

Harmonization has been discussed by several groups and there has already emerged some preliminary guidance and principles for the effective harmonization of data concepts for intelligent transport systems [ITS].

It should be clearly recognized that harmonization is not essential for interoperability, which can usually be achieved given sufficient investment of knowledge and resources. Nevertheless, this generally leads to duplication and other unnecessary, even futile work being undertaken. This also assumes that there are unlimited resources available to achieve the desired interoperability, whereas, in practice, time, budget and shortage of skilled personnel often cause compromise. Additionally, interoperability in one aspect is sometimes achieved by the lack or loss of interoperability in another. Harmonization is intended to reduce the inconsequential work, increase efficiency and thereby reduce the incidence of errors and faults.

This Technical Report describes a proposed process for harmonization of data concepts to arrive at preferred definitions for use in formal standards, specifications, technical reports and information architecture (data) models. The proposal is based on consideration of the harmonization process used by three international groups involved in transport and logistics information and control systems.

Harmonization provides a means by which to improve efficiency and effectiveness of ITS, by helping to remove duplication, inefficiency, ambiguity and confusion, and thereby improve clarity, comprehension, safety and efficiency.

Intelligent transport systems — Systems architecture — Harmonization of ITS data concepts

1 Scope

The scope of this Technical Report is the harmonization of data concepts that are being managed by data registries and data dictionaries such as those described in ISO 14817:2002.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

core component

aggregate information entities and the embedded entities within them

data concept

data dictionary structures defined in this Technical Report (i.e. object class, property, value domain, data element concept, data element, data frame, message, interface dialogue, association) referring to abstractions or things in the natural world that can be identified with explicit boundaries and meaning and whose properties and behaviour all follow the same rules

harmonization

process to resolve differences in synonymous terminology when expressed precisely in syntactic form

3 Abbreviated terms

ACC	aggregate core components
CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
CCC	change control committee
CCTS	core components technical specification
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
ITS	intelligent transport systems
TBG17	UN/CEFACT Trade and Business Processes Group working group 17
TC	technical committee
TICS	transport information and control system
TIH	transport information highway (UK)
UML	unified modeling language
UN	United Nations