PD ISO/TR 21718:2019

BSI Standards Publication

Intelligent transport systems — Spatio-temporal data dictionary for cooperative ITS and automated driving systems 2.0

Documents
Document Sharing Hub

Full document details: PD ISO/TR 21718:2019

National foreword

This Published Document is the UK implementation of ISO/TR 21718:2019. It supersedes PD ISO/TR 21718:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/278, Intelligent transport systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2019
Published by BSI Standards Limited 2019

ISBN 978 0 539 01467 9

ICS 03.220.01; 35.240.60

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 January 2019.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: PD ISO/TR 21718:2019

TECHNICAL REPORT

ISO/TR 21718

Second edition
2019-01

Intelligent transport systems — Spatio-temporal data dictionary for cooperative ITS and automated driving systems 2.0

Systèmes de transport intelligents — Dictionnaire de données spatio-temporelles pour les systèmes de conduite automatisée 2.0 et les STI coopératifs

Reference number
ISO/TR 21718:2019(E)

AVA Documents
Document Sharing Hub
© ISO 2019

Full document details: PD ISO/TR 21718:2019

COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub

Full document details: PD ISO/TR 21718:2019

Contents

Page

Foreword iv
Introduction v
1 Scope 1
2 Normative references 1
3 Terms and definitions 1
4 Abbreviated terms 3
5 Contents and descriptive names of data dictionary 3
6 Data dictionary description 4
Annex A (informative) Dedicated data type for data dictionary 230
Annex B (informative) List of data concept name from SAE J2735: Dedicated Short Range Communications (DSRC) Message Set Dictionary 237
Bibliography 248

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

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 of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This second edition cancels and replaces the first edition (ISO/TR 21718:2017), which has been technically revised. The main changes since the last edition are the following:

— task force team have collaborated with SAE, and combined the SAE deliverable and the first edition;

— the list of the data concept names described in SAE J 2735: 2016 have been included as Annex B.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Introduction

Cooperative ITS and automated driving systems as energy-saving technology have attracted much attention. These systems are expected to reduce traffic congestion and achieve smoother transportation.

Recently, car manufacturers, car parts manufacturers and IT companies have started driving tests for automated driving systems on the public road. Several car manufacturers have released the schedule of commercial viability and automated driving systems and are expected to put it into practical use within two or three years.

In the existing ITS applications, geographical information are optimally designed for individual systems. Thus, a large amount of resources are required in order to create, provide and maintain this information.

In the future, spatio-temporal data for ITS which includes static and dynamic temporal-spatial data will be required for Cooperative ITS and automated driving systems. In order to create, provide and maintain these data, much more resources will be required.

Spatio-temporal data can be used for different types of application systems. A common understanding and sharing of spatio-temporal data is formulated by this data dictionary. For instance, spatio-temporal data for ITS includes location information or has relationships with location.

Standardization of spatio-temporal data dictionary is expected to contribute to research and development and dissemination of cooperative ITS and automated systems by stakeholders.

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Documents
Document Sharing Hub

Full document details: PD ISO/TR 21718:2019

Intelligent transport systems — Spatio-temporal data dictionary for cooperative ITS and automated driving systems 2.0

1 Scope

This document is a compilation of terms to be contained in a spatio-temporal data dictionary for cooperative-ITS and automated driving systems.

This data dictionary includes static data (e.g. map, road signs and buildings) and dynamic data (e.g. traffic condition, accident reports).

This document is an updated and expanded version of ISO/TR 21718:2017.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
aggregate domain
data concept that defines a grouping of data elements and/or data frames

3.2
data concept
item that may be stored in a data dictionary that refers to an abstraction or thing in the natural world that can be identified with explicit boundaries and meaning and whose properties and behaviour all follow the same rules

Note 1 to entry: Data concepts can be classified into the following types: object class, value domain, data element, aggregate domain, data frame, message, interface dialogue, dictionary document, or module.

3.3
data concept type
categorization of the kind of data concept

© ISO 2019 – All rights reserved

Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

3.4
data dictionary
listing of data concepts and their meta-attributes in a consistent format

3.5
data element
data concept represented by a specific value domain that describes a single atomic property about an object class

Note 1 to entry: A data element is composed of an object class, a property of the represented object class and a value domain.

3.6
data frame
data concept represented by a specific aggregate domain that describes information of interest through a useful grouping of more atomic properties about one or more object classes

Note 1 to entry: The grouping may be a set, sequence, or a choice.

3.7
dynamic data
data which has short life-span data such as a position of vehicle

3.8
message
data concept that is a grouping of data elements, data frames, or data elements and data frames that is used to convey a complete set of information

Note 1 to entry: For the purposes of this document, a message is an abstract description; it is not a specific instance.

3.9
module
data concept that contains the formal syntactic definition, and optionally the semantic definition, of a defined set of other data concepts that are all version-controlled as a single unit

Note 1 to entry: A module can be represented in multiple languages (e.g., ASN.1 or XML Schema) and compiled by computer systems.

3.10
source
document or other reference that was used to develop the pertinent data concept

3.11
spatio-temporal (adjective)
relating to both space and time

3.12
static data
data which do not change automatically

3.13
value domain
data concept that defines a set of permissible values

© ISO 2019 – All rights reserved
AVA Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

4 Abbreviated terms

ACC	Adaptive Cruise Control systems
APS	Assisted Parking System
CACC	Cooperative adaptive cruise control
CIWS	Cooperative Intersection signal information and violation Warning Systems
CSWS	Curve Speed Warning Systems
FVCMS	Forward Vehicle Collision Mitigation Systems
GNSS	Global Navigation Satellite System
ITS	Intelligent Transport Systems
JARI	Japan Automobile Research Institute
LCDAS	Lane Change Decision Aid Systems
LKAS	Lane Keeping Assistance Systems
TISA	Traveller Information Services Association

5 Contents and descriptive names of data dictionary

The data dictionary consists of the following items.

Data concept name	descriptive name of data concepts
data concept type	module/message/data frame/data element/aggregate domain/value domain
data status category	dynamic/static
Definition and description	Definition and description of data contents
Data structure	definition of data content by XML schema
Issued by	authors who published the source documents
source documents	original documents
remark	other information

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

6 Data dictionary description

This data dictionary is described alphabetically.

[a]

absolute geo coordinate

Data concept name	AbsoluteGeoCoordinate	Data status category	static
		Data concept type	data element
Definition and description	AbsoluteGeoCoordinate specifies a geo position with longitude and latitude values with a deca micro degree accuracy stored in 24 bit integer value. Longitude: 24-bit representation of a longitude value in deca micro degree precision. Latitude: 24-bit representation of a latitude value in deca micro degree precision. Altitude: Elevation of location in metres above/below Mean Sea Level.		
Data structure	<xs:complexType name="AbsoluteGeoCoordinate"> <xs:sequence> <xs:element name="longitude" type="tdt:IntSi24"/> <xs:element name="latitude" type="tdt:IntSi24"/> <xs:element name="altitude" type="tdt:IntSiLoMB" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO/TS 21219-22:2017
Remarks			

acceleration

Data concept name	Acceleration	Data status category	dynamic
		Data concept type	data element
Definition and description	Acceleration provides a value and unit of vehicle acceleration. Value of unit of acceleration is given by unit code which is assigned as 0,01 m/sec*sec, 0,02 m/sec*sec, 0,1 m/sec*sec, 0,25 m/sec*sec, 1 m/sec*sec, 0,01 G and 0,02 G.		
Data structure	<xs:complexType name="Acceleration" > <xs:sequence> <xs:element name="valueOfAcceleration" type="xs:unsignedInt"/> <xs:element name="unitCodeOfAcceleration" type="FourBitCode"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

acceleration set

Data concept name	Acceleration Set	Data status category	dynamic
		Data concept type	data element
Definition and description	Acceleration Set provides accelerations of three axial directions of vehicle.		
Data structure	<xs:complexType name=“ AccelerationSet”> <xs:element name=“longitudionalAcceleration" type=“Acceleration"/> <xs:element name=“lateralAcceleration" type=“Acceleration"/> <xs:element name=“verticalAcceleration" type=“VerticalAcceleration"/> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

acceleration confidence

Data concept name	Acceleration confidence	Data status category	dynamic
		Data concept type	data element
Definition and description	AccelerationConfidence provides the confidence of acceleration of the vehicle. It is a confidence level of 95 % of reliability.		
Data structure	<xs:simpleType name="AccelerationConfidence" > <xs:element name="accelerationConfidence" type=“Confidence"/> </xs:simpleType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

accuracy millimetre

Data concept name	AccuracyMillimetre	Data status category	static
		Data concept type	value domain
Definition and description	It is one of the accuracy expressions for a length or distance. Unit is a millimetre.		
Data structure	<xs:simpleType name="AccuracyMillimetre"> <xs:restriction base ="xs:float"> <xs:minInclusive value="0,0"/> </xs:restriction> </xs:simpleType>		
Issued by		source document	ISO 22837:2009
Remarks			

advisory point

Data concept name	AdvisoryPoint	Data status category	static
		Data concept type	data element
Definition and description	Advisor Point provides a location and contents of the advisory on the road.		
Data structure	<xs:complexType name="AdvisoryPoint"> <xs:sequence> <xs:element name="roadSectionId"type="ID32bit"/> <xs:element name="roadElementId"type="ID32bit"/> <xs:element name="advisoryPointId" type="ID32bit"/> <xs:element name="positionStartAdvisoryPoint" type="PointLocation"/> <xs:element name="positionEndAdvisoryPoint" type="PointLocation" minOccures="0"/> <xs:element name="lengthAdvisoryPointFromStartIPC" type="Length" minOccures="0"/> <xs:element name="numAdvisoryPointFromStartIPC" type="xs:unsignedInt" minOccures="0"/> <xs:element name="lengthAdvisorySection" type="Length" minOccures="0"/> <xs:element name="advisoryAttribute" type="FourDigitCode" minOccures="0"/> <xs:element name="advisoryText" type="xs:string" minOccures="0"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

© ISO 2019 – All rights reserved
Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

altitude

Data concept name	Altitude	Data status category	static
		Data concept type	value domain
Definition and description	It provides a value of the Altitude of ITRF94 coordinate. Unit of standard resolution is 10 mm and unit of high resolution is 1 cm.		
Data structure	<xs:complexType name="Altitude"> <xs:choice> <xs:element name="StandardResolutionAltitude" minOccurs="0"> <xs:simpleType > <xs:restriction base="FiveDigitSignedInt"/> </xs:simpleType> </xs:element> <xs:element name="HighResolutionAltitude" minOccurs="0"> <xs:simpleType> <xs:restriction base="SevenDigitSignedInt"/> </xs:simpleType> </xs:element> </xs:choice> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

ambient air pressure

Data concept name	AmbientAirPressure	Data status category	dynamic
		Data concept type	data element
Definition and description	It provides an ambient air pressure sensed by OBU/RSU conformity SAE J2735 The value of data expresses 1,090 hPa from 580 hPa. Value "0" means "unknown", unit is 2 hPa.		
Data structure	<xs:simpleType name=" AmbientAirPressure" > <xs:element name="ambientAirPressure" type="xs:unsignedByte"/> </xs:simpleType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

angle of curved road

Data name	AngleOfCurvedRoad	Data status category	static
		Data concept type	value domain
Definition and description	Central angle between the curve start point and the curve end point [radian]		
Data structure	<xs:simpleType name="AngleOfCurvedRoad" type="EXTERNAL"/>		
Issued by		source document	ISO 11067:2015 CSWS
Remarks			

availability of moving adjoining lane

Data concept name	AvailabilityOfMovingAdjoining Lane	Data status category	static
		Data concept type	value domain
Definition and description	It is one of the attributes of the lane. It provides availability of moving to adjoining lanes.		
Data structure	<xs:simpleType name="AvailabilityMovingAdjoiningLane"> <xs:union> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="do not move to right and left"/> <xs:enumeration value="do not move to right and can move to left"/> <xs:enumeration value="can move to right and does not move to left"/> <xs:enumeration value="can move to right and left "/> </xs:restriction> </xs:simpleType> <xs:simpleType> <xs:restriction base="TwoBitCode"/> </xs:simpleType> </xs:union> </xs:simpleType>		
Issued by		source document	ISO 14296:2016
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

available service

Data concept name	AvailableService	Data status category	static
		Data concept type	data element
Definition and description	This is services in Parking Facility (i.e. fuel station, car wash, toilet, restaurant, shop, shower room, break room)		
Data structure	<xs:simpleType name="AvailableService" type="SixteenBitAssignedCode" />		
Issued by		source document	ISO 16787:2016 APS
Remarks			

axle location

Data concept name	AxleLocation	Data status category	static
		Data concept type	aggregate domain
Definition and description	This is location of the axle of the vehicle. Location is shown by the length from a bumper. conformity SAE J1939 Unit value of location is given by 4 bit code which is assigned as 0,01 m, 0,05 m, 0,1 m, 0,2 m.		
Data structure	<xs:complexType name="AxleLocation"> <xs:sequence> <xs:element name="LRPos" type="FourBitCode" /> <xs:element name="FRPos" type="FourBitCode" /> <xs:element name="valueOfAlexPositionFromBumper" type="ThreeDigitUnsignedInt"/> <xs:element name="unitOfAlexPosition" type="FourBitCode" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Real value of location is the product of a valueOfAlexPosition and unitOfAlex.		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

axle weight

Data concept name	AxleWeight	Data status category	static
		Data concept type	value domain
Definition and description	It provides the weight of the axle of vehicle. conformity SAE J1939 Unit value of weight is given by 4 bit code which is assigned as 0,1 Kg, 0,2 Kg, 0,5 Kg, 1 kg, 10 Kg, 20 Kg.		
Data structure	<xs:complexType name="AxleWeight"> <xs:sequence> <xs:element name="valueOfWeight" type="xs:unsignedInt"/> <xs:element name="unitOfWeight" minOccurs="0"> <xs:simpleType> <xs:union> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="0,1Kg"/> <xs:enumeration value="0,2Kg"/> <xs:enumeration value="0,5Kg"/> <xs:enumeration value="1Kg"/> <xs:enumeration value="10Kg"/> <xs:enumeration value="20Kg"/> </xs:restriction> </xs:simpleType> <xs:simpleType> <xs:restricton base="FourBitCode"/> </xs:simpleType> </xs:union> </xs:simpleType> </xs:element> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Real weight is the product of a valueOfWeight and a unitOfWeight.		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth

Data concept name	Azimuth	Data status category	dynamic
		Data concept type	value domain
Definition and description	It provides an angle between a direction of target and direction of reference of the horizontal plane. Generally, direction of reference is north and clockwise.		
Data structure	<xs:complexType name="Azimuth" > <xs:element name="azimuthValue" type="xs:positiveInteger" /> <xs:element name="azimuthUnit" type="AzimuthUnit" minOccurs="0" /> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Real value of Azimuth is the product of an azimuthValue and azimuthUnit.		

azimuth and length

Data concept name	AzimuthAndLength	Data status category	dynamic
		Data concept type	aggregate domain
Definition and description	It provides a relative position from reference point to target object. A relative position is expressed by an azimuth and a length.		
Data structure	<xs:complexType name=" AzimuthAndLength"> <xs:element name="valueOfAzimuth" type="Azimuth" /> <xs:element name=" valueOfLength" type="Length" /> </xs:ComplexType>		
Issued by		source document	ISO 16787:2016 APS
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth attribute

Data concept name	AzimuthAttribute	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthAttribute provides objects and unit of azimuth.		
Data structure	<xs:complexType name="AzimuthAttribute"> <xs:sequence> <xs:element name="azimuthObject" type="AzimuthObject" minOccurs="0" /> <xs:element name="azimuthUnit" type="AzimuthUnit" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

azimuth confidence

Data concept name	AzimuthConfidence	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthConfidence is composed of heading confidence and direction of road confidence.		
Data structure	<xs:complexType name="AzimuthConfidence" > <xs:choice> <xs:element name="headingConfidence" type="HeadingConfidence"/> <xs:element name="directionOfRoadConfidence" type="DirectionOfRoadConfidence"/> </xs:choice> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth expression

Data concept name	AzimuthExpression	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthExpression is composed of Azimuth and AzimuthAttribute.		
Data structure	<xs:complexType name="AzimuthExpression" > <xs:sequence> <xs:element name="azimuth" type="Amizuth" /> <xs:element name="azimuthAttribute" type="AzimuthAttribute"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

azimuth object

Data concept name	AzimuthObject	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthObject indicates the expression object (i.e. device, road, event and region) of Azimuth.		
Data structure	<xs:complexType name=" AzimuthObject"> <xs:choice> <xs:element name="azimuthObjectDevice" type=" AzimuthObjectDevice" /> <xs:element name="azimuthObjectRoad" type="AzimuthObjectRoad" /> <xs:element name="azimuthObjectEvent" type="AzimuthObjectEvent" /> <xs:element name="azimuthObjectRegion" type="AzimuthObjectRegion" /> </xs:choice> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth object device

Data concept name	AzimuthObjectDevice	Data status category	dynamic
		Data concept type	data frame
Definition and description	It indicates an OBU or RSU device for azimuth object.		
Data structure	<xs:simpleType name=“ AzimuthObjectDevice" type=“EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Data Type “EXTERNAL” represents to be defined by other organization, or undefined.		

azimuth object event

Data concept name	AzimuthObjectEvent	Data status category	dynamic
		Data concept type	data frame
Definition and description	It indicates the event for azimuth object.		
Data structure	<xs:simpleType name=“AzimuthObjectEvent" type=“EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Data Type “EXTERNAL” represents to be defined by other organization, or undefined.		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth object region

Data concept name	AzimuthObjectRegion	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthObjectRegion indicates the region for azimuth object.		
Data structure	<xs:simpleType name="AzimuthObjectRegion" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Data Type "EXTERNAL" represents to be defined by other organization, or undefined.		

azimuth object road

Data concept name	AzimuthObjectRoad	Data status category	dynamic
		Data concept type	data frame
Definition and description	AzimuthObjectRoad indicates the road for azimuth object.		
Data structure	<xs:simpleType name="AzimuthObjectRoad" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Data Type "EXTERNAL" represents to be defined by other organization, or undefined.		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

azimuth type

Data concept name	AzimuthType	Data status category	dynamic
		Data concept type	data element
Definition and description	AzimuthType indicates “azimuth” or “direction”.		
Data structure	<xs:simpleType name=“AzimuthType" type=“xs:boolean"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	True indicates “azimuth”, False indicates “direction”		

azimuth unit

Data concept name	AzimuthUnit	Data status category	dynamic
		Data concept type	value domain
Definition and description	AzimuthUnit indicates minimum unit of azimuth. Value of Unit of Azimuth is provided by 4 bit code.		
Data structure	<xs:simpleType name=“AzimuthUnit" > <xs:union> <xs:simpleType> <xs:restriction base=“xs:integer"> <xs:enumeration value=“90"/> <xs:enumeration value=“45"/> <xs:enumeration value=“22,5 "/> <xs:enumeration value=“5"/> <xs:enumeration value=“2"/> <xs:enumeration value=“1"/> <xs:enumeration value=“0,5"/> <xs:enumeration value=“0,2"/> <xs:enumeration value=“0,1"/> <xs:enumeration value=“0,05"/> <xs:enumeration value=“0,0125"/> </xs:restriction> </xs:simpleType> <xs:simpleType> <xs:restricton base=“FourBitCode"/> </xs:simpleType> </xs:union> </xs:simpleType>		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

[b]

bad weather condition

Data concept name	BadWeatherCondition	Data status category	dynamic
		Data concept type	data frame
Definition and description	BadWeatherCondition indicates weather condition such as rain, sunshine and ambient air pressure.		
Data structure	<xs:complexType name=“ BadWeatherCondition" > <xs:sequence> <xs:element name=“rain" type=“Rain" /> <xs:element name=“sunshine" type=“Sunshine" /> <xs:element name=“ambientAirPressure" type=“AmbientAirPressure" /> </xs:sequencee> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

bearing

Data concept name	Bearing	Data status category	dynamic
		Data concept type	value domain
Definition and description	Bearing stores the value of a bearing angle in a compressed way. The full circle is divided into 256 sectors which yields a precision of 360/256 °.		
Data structure	<xs:complexType name=“Bearing"> <xs:sequence> <xs:element name=“value" type=“tdt:IntUnTi"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO/TS 21219-22:2017
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

boundary object

Data concept name	BoundaryObject	Data status category	static
		Data concept type	data element
Definition and description	It provides a feature object for indicating the boundary of an individual parking space		
Data structure	<xs:complexType name="BoundaryObject"> <xs:element name="EntranceLeftsideObjectType" type="ObjectCode" /> <xs:element name="EntranceRightsideObjectType" type="ObjectCode" /> <xs:element name="RearsideObjectType" type="ObjectCode" /> </xs:complexType>		
Issued by		source document	ISO 16787:2016 APS
Remarks			

brake applied pressure

Data concept name	BrakeAppliedPressure	Data status category	dynamic
		Data concept type	value domain
Definition and description	BrakeAppliedPressure indicates operating pressure or target pressure by brake pressure ratio that is expressed by dividing full pressure into 15.		
Data structure	<xs:simpleType name="BrakeAppliedPressure" type="FourBitCode"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

brake applied status

Data concept name	BrakeAppliedStatus	Data status category	dynamic
		Data concept type	data element
Definition and description	BrakeAppliedStatus indicates status of operating brake or target brake and type of brake.		
Data structure	<xs:complexType name="BrakeAppliedStatus" > <xs:sequence> <xs:element name="brakeType_1">		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

```
            <xs:simpleType>
              <xs:union>
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="manual"/>
                    <xs:enumeration value="automatic"/>
                  </xs:restriction>
                </xs:simpleType>
                <xs:simpleType>
                  <xs:restriction base="TwoBitCode"/>
                </xs:simpleType>
              </xs:union>
            </xs:simpleType>
          </xs:element>
          <xs:element name="brakeType_2" >
            <xs:simpleType>
              <xs:union>
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="mainBrake"/>
                    <xs:enumeration value="boostBrake"/>
                    <xs:enumeration value="parkingBrake"/>
                    <xs:enumeration value="antiLockBrake"/>
                  </xs:restriction>
                </xs:simpleType>
                <xs:simpleType>
                  <xs:restriction base="TwoBitCode"/>
                </xs:simpleType>
              </xs:union>
            </xs:simpleType>
          </xs:element>
          <xs:element name="brakeApplied" >
            <xs:simpleType>
              <xs:union>
                <xs:simpleType>
                  <xs:restriction base="xs:string">
                    <xs:enumeration value="unavailable"/>
                    <xs:enumeration value="off"/>
                    <xs:enumeration value="on-notoperate"/>
                    <xs:enumeration value="on-operate"/>
                  </xs:restriction>
                </xs:simpleType>
                <xs:simpleType>
                  <xs:restriction base="TwoBitCode"/>
                </xs:simpleType>
              </xs:union>
            </xs:simpleType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
```

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

brake status

Data concept name	BrakeStatus	Data status category	dynamic
		Data concept type	data frame
Definition and description	BrakeStatus indicates operating status of brake and brake pressure.		
Data structure	<xs:complexType name="BrakeStatus" > <xs:sequence> <xs:element name="brakeAppliedStatus" type="BrakeAppliedStatus" /> <xs:element name="brakeAppliedPressure" type="BrakeAppliedPressure" /> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

bridge and tunnel

Data concept name	BridgeAndTunnel	Data status category	static
		Data concept type	data element
Definition and description	It provides the structural specifications of a bridge and tunnel and also provides information on isolated crossing roads.		
Data structure	<xs:complexType name="BridgeTunnel"/> <xs:sequence> <xs:element name="roadElementId"type="ID32bit"/> <xs:element name="roadStructureId" type="ID32bit"/> <xs:element name="roadStructureType" type="TwoDigitUnsignedInt"/> <xs:element name="locationBridgeTunnel" type="PointLocation"/> <xs:element name="lengthBridgeTunnel" type="Length"/> <xs:element name="lengthFromStartRoadElement" type="Length"/> <xs:element name="heightInfo" type="Height" minOccures="0"/> <xs:element name="crossingInfo" type="GradeSeparatedCrossingRoad" /> <xs:element name="nameOfBridgeTunnel" type="xs:string" minOccures="0"/> </xs:sequence> </xs:complexType>		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Issued by		source document	ISO 14296:2016
Remarks			

bumper height

Data concept name	BumperHeight	Data status category	static
		Data concept type	data element
Definition and description	BumperHeight provides the height of a front bumper and rear bumper. Unit of height is a centimetre.		
Data structure	<xs:complexType name="BumperHeight"> <xs:sequence> <xs:element name="heightOfFrond" type="xs:unsignedInt"/> <xs:element name="heightOfRear" type=" xs:unsignedInt "/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

[c]

cancel effective range

Data concept name	CancelEffectiveRange	Data status category	dynamic
		Data concept type	data frame
Definition and description	CancelEffectiveRange is the flag which enables an effective range or disable.		
Data structure	<xs:simpleType name="CancelEffectiveRange" type=xs:boolean"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	True indicates "disable", False indicates "enable"		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

cargo weight

Data concept name	CargoWeight	Data status category	dynamic
		Data concept type	value domain
Definition and description	It is the loading weight of cargo for a vehicle. conformity SAE J1939 Unit value of weight is given by unit code which is assigned as 0,1 Kg, 0,2 Kg, 0,5 Kg, 1 Kg, 10 Kg, 20 Kg.		
Data structure	<xs:complexType name="CargoWeight"> <xs:sequence> <xs:element name="valueOfWeight" type="xs:unsignedInt"/> <xs:element name="unitOfWeight" type="UnitOfWeight" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks	Real weight is the product of the value of weight and unit of weight.		

cartographic

Data concept name	Cartographics	Data status category	static
		Data concept type	data frame
Definition and description	Cartographics are the data to make a map, and are used for drawing the background map except the road network in ITS. Cartographics consists of data blocks of CartographicFeatures		
Data structure	<xs:complexType name="Cartgraphic">\ <xs:sequence maxOccurs="unbounded">\ <xs:element name="displayClass" type="OneDigitInt"/> <xs:element name="numCartographicFeature" type="TwoDigitInt"/> <xs:element name="cartographicFeatureList" > <xs:complexType> <xs:sequence maxOccurs="unbounded">\ <xs:element name="cartographicFeature" type="CartographicFeature" /> </xs:sequence> </xs:complexType> </xs:element> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

© ISO 2019 – All rights reserved
AVA Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

cartographic feature

Data concept name	CartographicsFeature	Data status category	static
		Data concept type	data frame
Definition and description	CartographicFeatures are sub-blocks of Cartographics. Each data block of CartographicFeature is categorized by the Feature Types.		
Data structure	<xs:complexType name="CartographicFeature"> <xs:sequence maxOccurs="unbounded"> <xs:element name="cartographicFeatureType" type="FourDigitCode"/> <xs:element name="displayClass" type="OneDigitInt" numminOccures="0"/> <xs:element name="numCartographicFigureElement" type="FourDigitInt"/> <xs:element name="cartographicFigureElementList" > <xs:complexType> <xs:sequence maxOccurs="unbounded"> <xs:element name="cartographicFigureElement" type="CartographicFigureElement"/> </sequence> </xs:complexType> </xs:element> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

cartographic figure element

Data concept name	CartographicsFigureElement	Data status category	static
		Data concept type	data frame
Definition and description	Cartographic Figure element provides the shape data of individual map objects. There are three types:point, polyline, polygon, in cartographics figure elements.		
Data structure	<xs:complexType name="CartographicFigureElement">> <xs:element name="figureElementId" type="ID32bit"/> <xs:element name="displayClass" type="OneDigitUnsignedInt" numminOccures="0"/> <xs:element name="cartographicFeatureType" type="FourDigitCode" numminOccures="0"/> <xs:element name="backgroundTypeCode" type="Flag"/> <xs:element name="representativeCoordination" type="PointLocation"/> <xs:element name="cartograficTextId" type="ID32bit" numminOccures="0"/>		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

	<xs:element name="areaCode" type="EightDigitCode" numminOccures="0"/> <xs:element name="numFigureElementShape" type="FourDigitUnsignedInt"/> <xs:element name="figureElementShapeList"> <xs:complexType> <xs:sequence maxOccurs="unbounded"> <xs:element name="figureType" type="OneDigitCode" /> <xs:element name="colorCode" type="OneDigitCode" /> <xs:element name="referenceCoordination" type="PointLocation" /> <xs:element neme="numShapePoint" type="FourDigitUnsignedInt" /> <xs:element name="shapePointList" type="ShapePointList" /> </xs:sequence> </xs:complexType> </xs:element> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

cause event

Data concept name	CauseEvent	Data status category	static
		Data concept type	data frame
Definition and description	It provides the cause of traffic regulations and obstacle events that disrupt the traffic flow. For example: accident, fire, disabled vehicle, road obstacle, construction, roadwork, bad weather, disaster, earthquake caution.		
Data structure	<xs:simpleType name="CauseEvent" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

caution point

Data concept name	CautionPoint	Data status category	static
		Data concept type	data element
Definition and description	Caution Point provides the location and text of the caution that is provided to the driver.		
Data structure	<xs:complexType name="CautionPoint"> <xs:element name="cautionPointId" type="ID32bit" /> <xs:element name="roadElementId" type="ID32bit" numminOccures="0" /> <xs:element name="intersectionId" type="ID32bit" numminOccures="0"/> <xs:element name="cautionContentCode" type="FourDigitCode"/> <xs:element name="locationCautionPoint" type="PointLocation"/> <xs:element name="cautionText" type="xs:string"/> </complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

circle location reference

Data concept name	CircleLocationReference	Data status category	dynamic
		Data concept type	data element
Definition and description	A circle location shall be given by the position of the center and the radius. The center position shall be a geo-coordinate pair of longitude and latitude coordinate values that may be everywhere on the surface. The radius shall be integer-valued and given in metres.		
Data structure	<xs:complexType name="CircleLocationReference"> <xs:sequence> <xs:element name="centerPoint" type="AbsoluteGeoCoordinate"/> <xs:element name="radius" type="tdt:DistanceMetres"/> <xs:element name="isFuzzyArea" type="tdt:Boolean"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO/TS 21219-22:2017
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

clockwise angle direction

Data concept name	ClockwiseAngleDirection	Data status category	static
		Data concept type	value domain
Definition and description	The Clockwise Angle Direction expresses a direction by the clockwise angles that were based on a running direction or north. Value of Angle is 0° to 359° and unit is 1°.		
Data structure	<xs:complexType name=“ ClockwiseAngleDirection"> <xs:sequence> <xs:element name=“clockwiseAngle" > <xs:simpleType name=“ ClockwiseAngle"> <xs:restriction base=“ThreeDigitUnsignedInt"> <xs:minInclusive value=“000"/> <xs:minInclusive value=“359"/> </xs:restriction> </xs:simpleType> </xs:element> <xs:element name=“baseDirection" minOccurs=“0"> <xs:simpleType> <xs:union> <xs:simpleType> <xs:restriction base=“xs:string"> <xs:enumeration value=“North"/> <xs:enumeration value=“Heading"/> </xs:restriction> </xs:simpleType> <xs:simpleType> <xs:restriction base=“xs:boolean"/> </xs:simpleType> </xs:union> </xs:simpleType> </xs:element> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks	baseDirection: True indicates “North”, False indicates “Heading”.		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

clockwise direction

Data concept name	ClockwiseDirection	Data status category	static
		Data concept type	value domain
Definition and description	The Clockwise Direction expresses a direction by the value of the dial of the clock that is based on a running direction or the north.		
Data structure	<xs:simpleType name="ClockwiseDirection"> <restriction base="xs:unsignedShort"> <xs:minInclusive value="00"/> <xs:maxInclusive value="11"/> </xs:restriction> </xs:simpleType>		
Issued by		source document	ISO 14296:2016
Remarks			

closed linear location reference

Data concept name	ClosedLinearLocationReference	Data status category	dynamic
		Data concept type	data frame
Definition and description	A closed linear location references the area defined by a closed path (i.e. a circuit) in the road network. The boundary shall always consist of road segments. The path of a closed linear location may contain self-intersections if courses (e.g. marathon course) are referenced. Otherwise, for referencing areas, self-intersections should not appear.		
Data structure	<xs:complexType name="ClosedLinearLocationReference">\ <xs:sequence> <xs:element name="first" type="FirstLocationReferencePoint"/> <xs:element name="intermediates" type="IntermediateLocationReferencePoint" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="last" type="LineProperties"/> <xs:element name="shape" type="Shape" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO/TS 21219-22:2017
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

code information

Data concept name	CodeInformation	Data status category	dynamic
		Data concept type	data frame
Definition and description	It provides the information regarding decode control of the code.		
Data structure	<xs:simpleType name="CodeInformation" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

compass direction

Data concept name	CompassDirection	Data status category	dynamic/ static
		Data concept type	value domain
Definition and description	CompassDirection expresses a direction by the angle, code or abbreviations of compass, e.g, NNE means a "north north east" direction.		
Data structure	<xs:complexType name="CompassDirection"> <xs:choice> <xs:element name="clockwiseAngleDirection" type="ClockwiseAngleDirection"/> <xs:element name="compassAbbrivation"> <xs:simpleType name="CompassAbbrivation"> <restriction base="xs:string"> <xs:enumeration value="N "/> <xs:enumeration value="NNE"/> <xs:enumeration value="NE "/> <xs:enumeration value="NEN"/> <xs:enumeration value="E " /> <xs:enumeration value="ESE"/> <xs:enumeration value="SE "/> <xs:enumeration value="SSE"/> <xs:enumeration value="S "/> <xs:enumeration value="SSW "/> <xs:enumeration value="SW "/> <xs:enumeration value="WSW" /> <xs:enumeration value="W "/> <xs:enumeration value="WNW"/> <xs:enumeration value="NW "/> <xs:enumeration value="NNW"/> </xs:restriction>		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

	<xs:simpleType> </xs:element> <xs:element name="compass32IndexCode"> <xs:simpleType name="Compass32IndexCode"> <restriction base="TwoDigitUnsignedInt"> <xs:minInclusive value="00"/> <xs:maxInclusive value="31"/> </xs:restriction> </xs:simpleType> </xs:element> </xs:choice> </complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

confidence

Data concept name	Confidence	Data status category	dynamic
		Data concept type	value domain
Definition and description	It provides the generic data of precision/ reliability for time, location, position, length, distance, height, azimuth, angle, direction, running vehicle status.		
Data structure	<xs:simpleType name="Confidence" > <xs:union> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="unknown"/> <xs:enumeration value="LSB-value/> <xs:enumeration value="LSB-valueX2"/> <xs:enumeration value="LSB-valueX5"/> <xs:enumeration value="LSB-valueX1X10"/> <xs:enumeration value="LSB-valueX2X10"/> <xs:enumeration value="LSB-valueX5X10"/> <xs:enumeration value="LSB-valueX1X100"/> <xs:enumeration value="LSB-valueX2X100"/> <xs:enumeration value="LSB-valueX5X100"/> <xs:enumeration value="LSB-valueX1X1000"/> <xs:enumeration value="LSB-valueX2X1000"/> <xs:enumeration value="LSB-valueX5X1000"/> <xs:enumeration value="LSB-valueX1X10000"/> <xs:enumeration value="LSB-valueX2X10000"/> <xs:enumeration value="LSB-valueX5X10000"/> </xs:restriction> </xs:simpleType>		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

	<xs:simpleType> <xs:restriction base="xs:unsignedByte"/> </xs:simpleType> </xs:union> </xs:simpleType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

confidence set

Data concept name	ConfidenceSet	Data status category	dynamic
		Data concept type	aggregate domain
Definition and description	It provides the precision/reliability information for time, location, position, length, distance, height, azimuth, angle, direction, running vehicle status.		
Data structure	<xs:complexType name="ConfidenceSet" > <xs:sequence> <xs:element name="timeConfidence" type="TimeConfidence"/> <xs:element name="positionConfidence" type="PositionConfidence"/> <xs:element name="azimuthConfidence" type="AzimuthConfidence"/> <xs:element name="drivingStatusConfidence" type="DrivingStatusConfidence"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

connected road

Data concept name	ConnectedRoad	Data status category	static
		Data concept type	data element
Definition and description	connected road with this parking facility and location		
Data structure	<xs:complexType name="ConnectedRoad"> <xs:sequence> <xs:element name="roadElementID" type=" RoadElementID" /> <xs:element name="roadWidth" type="Width" /> <xs:element name="passagewayCrossingID" type="PassagewayCrossingID" />		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

	<xs:element name="entranceExitLocation" type="Location" /> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 16787:2016 APS
Remarks			

connect IP

Data concept name	ConnectIP URI/URL	Data status category	dynamic
		Data concept type	data frame
Definition and description	URI/URL for internet connection		
Data structure	<xs:simpleType name="ConnectIP" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

contents of information HMI

Data concept name	ContentsOfInforHMI	Data status category	dynamic
		Data concept type	data frame
Definition and description	Contents information such as image, figure, sound data to provide in in-vehicle HMI		
Data structure	<xs:simpleType name="ContentsOfInforHMI" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

contents of information

Data concept name	ContentsOfInformation	Data status category	dynamic
		Data concept type	data module
Definition and description	Contents information such as image, figure, sound data, its format and internet connection information.		
Data structure	<xs:complexType name="ContentsOfInformation" > <xs:sequence> <xs:element name="contentsOfInfoHMI" type="ContentsOfInfoHMI"/> <xs:element name="iTIS-Phrase" type="ITIS-Phrase"/> <xs:element name="connectIP" type="ConnectIP"/> <xs:element name="descriptiveName" type="DescriptiveName"/> <xs:element name="payloadData" type="PayloadData"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

control status

Data concept name	ControlStatus	Data status category	dynamic
		Data concept type	data module
Definition and description	It provides control state data of throttle, transmission, brake and steering of vehicle, and status of electronic control units such as ACC, TRC, ABS.		
Data structure	<xs:complexType name="ControlStatus" > <xs:sequence> <xs:element name="throttleStatus" type="ThrottleStatus" /> <xs:element name="transmissionSiftPosition" type="TransmissionSiftPosition" /> <xs:element name="brakeAppliedStatus" type="BrakeAppliedStatus" /> <xs:element name="steeringWheelAngle" type="SteeringWheelAngle" /> <xs:element name="tirePressureThresholdDetection" type="TirePressureThresholdDetection" /> <xs:element name="driveControlSystemStatus" type="DriveControlSystemStatus" /> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

control system type

Data concept name	ControlSystemType	Data status category	dynamic
		Data concept type	value domain
Definition and description	It provides a type of electronic control unit such as ACC, TRC, and ABS for the vehicle.		
Data structure	<xs:simpleType name="ControlSystemType" > <xs:union> <xs:simpleType> <xs:restriction base="xs:string"> <xs:enumeration value="TRC"/> <xs:enumeration value="ABS"/> <xs:enumeration value="SCS"/> <xs:enumeration value="reserved"/> </xs:restriction> </xs:simpleType> <xs:simpleType> <xs:restriction base="xs:unsinedByte"/> </xs:simpleType> </xs:union> </xs:simpleType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

coordinates

Data concept name	Coordinates	Data status category	dynamic / static
		Data concept type	aggregate domain
Definition and description	Value of the coordinates consist of the longitude, latitude and altitude in conformity with ITRF94. Units of longitude and latitude are 1/1 000 000 °. Unit of altitude is 1/10 m.		
Data structure	<xs:complexType name="Coordinates"> <xs:element name="standardLongitude" type="Longitude"/> <xs:element name="standardLatitude" type="Latitude"/> <xs:element name="standardAltitude" type="Altitude" minOccurs="0"/> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

cooperative adaptive cruise control vehicle

Data concept name	CooperativeAdaptive CruiseControlVehicle	Data status category	static
		Data concept type	data element
Definition and description	Information from Cooperative Adaptive Cruise Control (CACC) Vehicle		
Data structure	<xs:complexType name="CooperativeAdaptiveCruiseControlVehicle" > <xs:sequence> <xs:element name="vehicleID" type="VehicleID" /> <xs:element name="messageTimeStamp" type="TimeStamp" /> <xs:element name="vehicleType" type="VehicleType" /> <xs:element name="vehicleLength" type="Length" /> <xs:element name="vehicleLocation" type="Position" /> <xs:element name="vehicleLocationConfidence" type="PositionConfidence" /> <xs:element name="vehicleHeading" type="Azimuth" /> <xs:element name="vehicleSpeed" type="VehicleSpeed" /> <xs:element name="longitudinalAcceleration" type="LongitudinalAcceleration" /> <xs:element name="yawRate" type="YawRate" /> <xs:element name="exteriorLight" type="ExteriorLightStatus" /> <xs:element name="longitudinalControlStatus" type="LongitudinalControlStatus" /> <xs:element name="targetSpeed" type="TargetSpeed" /> <xs:element name="targetGap" type="TargetGap" /> <xs:element name="targetAcceleration" type="TargetAcceleration" /> <xs:element name="pVGapDistance" type="PVGapDistance" /> </xs:sequence> </xs:complexType		
Issued by		source document	ISO 16787:2016 APS
Remarks			

© ISO 2019 – All rights reserved
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

count

Data concept name	Count	Data status category	dynamic
		Data concept type	value domain
Definition and description	The numerical value of the increment/decrement counter, or the number of the data and data group used for numerical control.		
Data structure	<xs:simpleType name="Count" type=xs:unsignedInteger"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

course of travel

Data concept name	CourseOfTravel	Data status category	dynamic
		Data concept type	data element
Definition and description	Course/ route of travelling or moving for traveler or vehicle.		
Data structure	<xs:simpleType name=" CourseOfTravel" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

crash status

Data concept name	CrashStatus	Data status category	dynamic
		Data concept type	data element
Definition and description	It provides the status of traffic accidents or vehicle accidents.		
Data structure	<xs:simpleType name="CrashStatus" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

crosswalk lane

Data concept name	CrosswalkLane	Data status category	dynamic
		Data concept type	data frame
Definition and description	It provides the type, structure and shape of a crosswalk.		
Data structure	<xs:simpleType name="CrosswalkLane" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

curvature

Data name	Curvature	Data status category	static
		Data concept type	value domain
Definition and description	Inverse of the radius of curved road [1/m].		
Data structure	<xs:simpleType name="Curvature" type="EXTERNAL"/>		
Issued by		source document	ISO 11270:2014 LKAS
Remarks			

curvature rate

Data name	CurvatureRate	Data status category	static
		Data concept type	value domain
Definition and description	Rate of change of curvature along the clothoid of a curved road [1/m2].		
Data structure	<xs:simpleType name="CurvetureRate" type="EXTERNAL"/>		
Issued by		source document	ISO 11270:2014 LKAS
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

curve radius

Data name	CurveRadius	Data status category	static
		Data concept type	value domain
Definition and description	Radius of the curve.		
Data structure	<xs:simpleType name="CurveRadius" type="EXTERNAL"/>		
Issued by		source document	ISO 15622:2010 ACC
Remarks			

[d]

dangerous goods

Data concept name	DangerousGoods	Data status category	static
		Data concept type	data element
Definition and description	Type of dangerous goods in the twelfth edition of the United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG).		
Data structure	<xs:simpleType name="DangerousGoods" type="xs:unsignedShort"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

dangerous goods transport

Data concept name	DangerousGoodsTransport	Data status category	static
		Data concept type	data frame
Definition and description	DengerousGoodsTransport provides information on dangerous goods in a vehicle.		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Data structure	<xs:complexType name="DangerousGoodsTransport" > <xs:sequence> <xs:element name="dangerousGoods" type="DangerousGoods"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

data control information

Data concept name	DataControlInformation	Data status category	dynamic
		Data concept type	data frame
Definition and description	It provides data control data such as existence and data length.		
Data structure	<xs:simpleType name="DataControlInformation " type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

data identifier

Data concept name	DataIdentifier	Data status category	dynamic
		Data concept type	data element
Definition and description	Identifier that is generated whenever any ITS-ST updates data.		
Data structure	<xs:complexType name="DataIdentifier" > <xs:sequence> <xs:element name="stationID" type="StationID"/> <xs:element name="sequendeNo" type="Count"/> </xs:sequence> </xs:complexType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

date restriction

Data concept name	DateRestriction	Data status category	static
		Data concept type	value domain
Definition and description	It provides the date for the traffic restriction.		
Data structure	<xs:complexType name="DateRestriction"> <xs:sequence maxOccurs="unbounded"> <xs:element name="startDate" type="MMDD"/> <xs:element name="endDate" type="MMDD" minOccurs="0"/> </xs:sequence> </xs:complexType>		
Issued by		source document	ISO 14296:2016
Remarks			

day of week restriction

Data concept name	DayOfWeekRestriction	Data status category	static
		Data concept type	value domain
Definition and description	The day of week data which assigned the existence of the traffic restriction each day of the week to each bit. See "day of week".		
Data structure	<xs:simpleType name="DayOfWeekRestriction" type="EightBitAssignedCode" />		
Issued by		source document	ISO 14296:2016
Remarks	bit0 is assigned "Sunday", bit6 is assigned "Saturday", bit7 is assigned "Holiday" Value "1" of each bit means that there is traffic restriction, value "0" means that there is no traffic restriction.		

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

degree

Data concept name	Degree	Data status category	static
		Data concept type	value domain
Definition and description	It is one of the units of the coordinates (i.e. latitude, longitude).		
Data structure	<xs:simpleType name="Degree"> <xs:restriction base ="xs:double"> <xs:maxInclusive value="180.0"> <xs:minInclusive value="-180.0"/> </xs:restriction> </xs:simpleType>		
Issued by		source document	ISO 22837:2009
Remarks			

descriptive name

Data concept name	DescriptiveName	Data status category	dynamic
		Data concept type	value domain
Definition and description	Name of contents		
Data structure	<xs:simpleType name="DescriptiveName" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

detection range

Data name	DetectionRange	Data status category	dynamic
		Data concept type	data element
Definition and description	Area that a sensor can detect.		

© ISO 2019 – All rights reserved

Documents
Document Sharing Hub
Full document details: PD ISO/TR 21718:2019

Data structure	<xs:simpleType name="DetectionRange" type="EXTERNAL"/>		
Issued by		source document	ISO 15622:2010 ACC
Remarks			

diagnosis

Data concept name	Diagnosis	Data status category	dynamic
		Data concept type	data frame
Definition and description	Fault and diagnosis information of OBU or RSU.		
Data structure	<xs:complexType name="Diagnosis" > <xs:choice> <xs:element name="diagnosisOBU" type="DiagnosisOBU"/> <xs:element name="diagnosisRSU" type="DiagnosisRSU"/> </xs:choice> </xs:simpleType>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

diagnosis OBU

Data concept name	DiagnosisOBU	Data status category	dynamic
		Data concept type	data frame
Definition and description	Fault and diagnosis information of vehicle station (OBU).		
Data structure	<xs:simpleType name="DiagnosisOBU" type="EXTERNAL"/>		
Issued by	JARI	source document	proposed CITS data dictionary
Remarks			

© ISO 2019 – All rights reserved
Documents Document Sharing Hub
Full document details: PD ISO/TR 21718:2019