SLOVENSKI STANDARD
oSIST prEN ISO 17419:2017

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Inteligentni transportni sistemi - Kooperativni sistemi - Globalna enotna identifikacija (ISO/DIS 17419:2017)

Intelligent transport systems - Cooperative systems - Globally unique identification (ISO/DIS 17419:2017)

Intelligente Verkehrssysteme - Kooperative ITS - Klassifikation und Steuerung von ITS Anwendungen im globalen Zusammenhang (ISO/DIS 17419:2017)

Systèmes intelligents de transport - Classification et gestion des applications de systèmes intelligents de transport dans un contexte global (ISO/DIS 17419:2017)

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Intelligent transport systems — Cooperative systems — Globally unique identification

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Foreword

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The committee responsible for this document is ISO/XXX

This second/third/... edition cancels and replaces the first/second/... edition (), [clause(s) / subclause(s) / table(s) / figure(s) / annex(es)] of which [has / have] been technically revised.

ISO XXXX consists of the following parts. [Add information as necessary.]

Introduction

Classification and management of ITS applications in a global context covers more than just the ITS applications themselves. It also covers elements of the environment in which ITS applications are instantiated.

Intelligent Transport Systems (ITS) provide ITS services to users by execution of ITS applications which typically requires communications between ITS station application processes residing in ITS station units (ITS-SU). Communications includes messages dedicated to ITS applications, and messages from ITS message sets.

Following the definition in TS 102 860 [20], ITS applications and ITS application classes are referred to as ITS application objects. ITS application objects are uniquely identified by the registered "ITS Application Identifier" (ITS-AID) specified in this document.

NOTE An ITS application class groups ITS applications together that provide the same type of service, e.g. "Electronic Fee Collection" (EFC), but operate in different contexts. Prior to start of service provisioning the applicable context is negotiated. The definition of ITS application classes is based on the concept of the DSRC Application entity as introduced in ISO 15628 [7], which is identified by a DSRCApplicationEntityID; negotiation of the applicable context is performed by BST/VST exchange.

In ETSI TS 102 860 [20], ITS message sets were referred to as ITS application objects. This definition is not adopted in this document due to the very different nature of ITS message sets and ITS application objects. ITS message sets are uniquely identified by the registered "ITS Message Set Identifier" (ITS-MsgSetID) specified in this document.

This document is an extension towards more general and global applicability of ETSI TS 102 860 [20]. This document introduces the term "ITS-S object" as a general reference to ITS application objects, ITS message sets and other objects which may require globally unique identification and registration.

NOTE Examples of other ITS-S objects are ITS-S communication protocols and ITS-S security protocols.

Management of ITS-S objects is specified in the set of documents ISO 24102 Parts 1 to 6 [9, 10, 11, 12, 13, 14], and in the document EN/ISO 17423 [2]. This document focuses on some management aspects related to authorized and controlled operation of ITS-S objects, which requires considerations of ITS-S object identifiers, e.g. ITS-AID, ITS-MsgSetID, ITS-SUID, ITS-SCUID, addresses and protocol identifiers used in the communication protocol stack of an ITS-S, and others.

This document replaces the CEN/ISO Technical Specification TS 17419 without change of scope.

Intelligent transport systems — Cooperative systems — Globally unique identification

1 Scope

This document

— describes and specifies globally unique addresses and identifiers (ITS-S object identifiers) which are both internal and external to ITS stations and are used for ITS station management,

— describes how ITS-S object identifiers and related technical parameters are used for classification, registration and management of ITS applications and ITS application classes,

— describes how ITS-S object identifiers are used in the ITS communication protocol stack,

— introduces an organizational framework for registration and management of ITS-S objects,

— defines and specifies management procedures at a high functional level,

— is based on the architecture of an ITS station specified in ISO 21217:2014 as a Bounded Secured Managed Domain (BSMD),

— specifies an ASN.1 module for the identifiers, addresses, and registry records identified in this International standard,

— specifies an ASN.1 module for a C-ITS Data Dictionary containing ASN.1 type definitions of general interest.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21217:2014, *Intelligent Transport Systems – Communications access for land mobiles (CALM) – Architecture*

ISO/IEC 8824-1:2008: "*Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*"

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21217:2014 and the following apply.

3.1
authorization
prescription that a particular behaviour shall not be prevented

NOTE Unlike a permission, an authorization is an empowerment.

NOTE From [21]

3.2
ITS application
instantiation of an ITS service that involves an association of two or more complementary ITS-S application processes

NOTE From ISO 21217:2014

3.3
ITS application class
ITS application with mutually exclusive characteristics designed for operation in different contexts

NOTE Introduced in ISO 15628 and ISO 24102-5

3.4
ITS application identifier
globally unique, registered number identifying an ITS application object

3.5
ITS application object
ITS application and ITS application class identified by a globally unique ITS application identifier (ITS-AID)

3.6
ITS message
message designed for an ITS-related purpose

3.7
ITS message set
set of uniquely identified ITS messages

NOTE From ISO 21217:2014

3.8
ITS message set identifier
globally unique, registered number identifying an ITS message set

3.9
ITS protocol stack identifier
globally unique, registered number identifying a non-parameterized communications protocol stack

3.10
ITS registration authority
entity authorized to register ITS-S object identifiers

3.11
ITS service
functionality provided to users of intelligent transport systems designed e.g. to increase safety, sustainability, efficiency, and comfort

NOTE From ISO 21217:2014

3.12
ITS trusted authority
entity authorized to issue ITS-S object security credentials

3.13
ITS-S application process
element in an ITS station that performs information processing for a particular application, and may use ITS-S services to transmit and receive information

NOTE From ISO 21217:2014

3.14
ITS-S application process provisioner
functionality in an ITS-SU offering ITS-S application processes for download and installation to other ITS-SUs

3.15
ITS-S communication protocol
protocol used in a communication protocol stack of an ITS-S

3.16
ITS-S communication protocol stack
consistent set of ITS-S communication protocols enabling communications between an ITS-SCU and other nodes which may be identified by a registered globally unique reference number

NOTE From EN/ISO 17423 [2]

3.17
ITS-SCU configuration management centre
entity that retains information about capabilities of ITS-SCUs, status of objects in ITS-SCUs, and supports management and update of this information

3.18
ITS-S object
entity used in ITS related to ITS-S management that may require a globally unique identifier

NOTE Examples of ITS-S objects include ITS-SU, ITS-SCU, ITS application object, ITS message set, ITS-S communication protocol, ITS flow type

3.19
ITS-S object identifier
an identifier of an ITS-S object

3.20
ITS-S object owner
entity responsible for the specification (design), maintenance and registration of an ITS-S object

3.21
ITS-S service
communication functionality of an ITS-S that provides the capability to connect to other nodes

NOTE From ISO 21217:2014

3.22
ITS-S unit
implementation of an ITS station

NOTE From ISO 21217:2014

3.23
permission
rule that a particular behaviour is allowed to occur

NOTE From ITU-T X.911 [21]

3.24
policy
set of rules related to a particular purpose, expressed as an obligation, an authorization, a permission or a prohibition

NOTE From ITU-T X.911 [21]

3.25
prohibition
prescription that a particular behaviour shall not occur

NOTE From ITU-T X.911 [21]

3.26
registration
assignment of an unambiguous name to an object in a way which makes the assignment available to interested parties

NOTE From ITU-T X.911 [22]

3.27
registration authority
entity such as an organization, a standard or an automated facility that performs registration of one or more types of objects

NOTE From ITU-T X.911 [22]

3.28
regulation (document)
written instrument containing rules having the force of law

3.29
regulation (process)
process of the promulgation, monitoring, and enforcement of rules defined in 'regulation (document)', established by primary and/or delegated legislation

3.30
regulator
agency responsible for exercising autonomous authority over some area of human activity

3.31
violation
behaviour contrary to a rule

NOTE From ITU-T X.911 [21]

4 Symbols and abbreviated terms

ARCP	Application Requirements for selection of Communication Profiles
BSMD	Bounded Secured Managed Domain
BST	Beacon Service Table
CEN	Commission Européenne de Normalisation
C-ITS	Co-operative Intelligent Transport Systems
ETSI	European Telecommunications Standards Institute
GCMA	Global Classification and Management of ITS Applications
IANA	Internet Assigned Numbers Authority
IEEE	Institute of Electrical and Electronics Engineers
IETF	Internet Engineering Task Force
ISO	International Standards Organisation
ITS	Intelligent Transport Systems
ITS-ACID	ITS Application Context Identifier
ITS-AID	ITS Application Identifier
ITS-AOOID	Application Object Owner (designer) Identifier
ITS-ATT	ITS Access Technology Type
ITS-FlowTypeID	ITS Flow Type Identifier
ITS-LCH	ITS Logical Channel
ITS-LCHID	ITS Logical Channel Identifier
ITS-MsgSetID	ITS Message Set Identifier
ITS-MSOID	ITS Message Set Owner Identifier
ITS-NTSDU	ITS Station Networking & Transport layer Service Data Unit
ITS-PN	ITS Port Number
ITS-PR	ITS policy region
ITS-PRID	ITS-PR Identifier
ITS-ProtID	ITS Protocol Identifier

ITS-ProtStckID	ITS Protocol Stack Identifier
ITS-RR	ITS Regulatory Region
ITS-RRID	ITS Regulatory Region Identifier
ITS-S	ITS Station
ITS-SAPID	ITS-S Application Process Identifier
ITS-SAPIID	ITS-S Application Process Instance Identifier
ITS-S-APDID	ITS-S Application Process Developer Identifier
ITS-S-APP	ITS-S application Process Provisioner
ITS-S-APPID	ITS-S Application Process Provider Identifier
ITS-SAPSSID	ITS-S Application Process Sink Source Identifier
ITS-S-CPID	ITS-S communication profile Identifier
ITS-SCU	ITS Station Communication Unit
ITS-SCU-CMC	ITS-SCU Configuration Management Centre
ITS-SCU-CMCID	ITS-SCU-CMD Identifier
ITS-SCUID	ITS-SCU Identifier
ITS-SecAlgID	ITS Security Algorithm Identifier
ITS-SEMID	ITS Station Equipment Manufacturer Identifier
ITS-S-FSID	ITS-S Facilities layer Service Identifier
ITS-SU	ITS Station Unit
ITS-SUID	ITS-SU Identifier
ITS-SU-UID	ITS-SU User Identifier
LDM	Local dynamic map
VST	Vehicle Service Table