



SLOVENSKI STANDARD

SIST-TS CEN ISO/TS 17419:2014

01-julij-2014

Inteligentni transportni sistemi - Kooperativni sistemi - Razvrščanje in upravljanje aplikacij ITS v globalnem kontekstu (ISO/TS 17419:2014)

Intelligent transport systems - Co-operative systems - Classification and management of ITS applications in a global context (ISO/TS 17419:2014)

Intelligente Transportsysteme - Kooperative Systeme - Klassifikation und Steuerung von ITS Anwendungen im globalen Zusammenhang (ISO/TS 17419:2014)

Systèmes intelligents de transport - Classification et gestion des applications de systèmes intelligents de transport dans un contexte global (ISO/TS 17419:2014)

[https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

[813a515a2e9a/sist-ts-cen-iso-ts-17419-2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

Ta slovenski standard je istoveten z: CEN ISO/TS 17419:2014

ICS:

03.220.01	Transport na splošno	Transport in general
35.240.60	Uporabniške rešitve IT v transportu in trgovini	IT applications in transport and trade

SIST-TS CEN ISO/TS 17419:2014

en,fr,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN ISO/TS 17419

April 2014

ICS 35.240.60; 03.220.20

English Version

**Intelligent transport systems - Cooperative systems -
Classification and management of ITS applications in a global
context (ISO/TS 17419:2014)**

Systèmes intelligents de transport - Classification et gestion
des applications de systèmes intelligents de transport dans
un contexte global (ISO/TS 17419:2014)

Intelligente Transportsysteme - Kooperative Systeme -
Klassifikation und Steuerung von ITS Anwendungen im
globalen Zusammenhang (ISO/TS 17419:2014)

This Technical Specification (CEN/TS) was approved by CEN on 8 March 2014 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)
<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

Foreword

This document (CEN ISO/TS 17419:2014) has been prepared by Technical Committee CEN/TC 278 "Intelligent transport systems", the secretariat of which is held by NEN, in collaboration with Technical Committee ISO/TC 204 "Intelligent transport systems".

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO/TS 17419:2014 has been approved by CEN as CEN ISO/TS 17419:2014 without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

TECHNICAL
SPECIFICATION

ISO/TS
17419

First edition
2014-04-15

**Intelligent transport systems —
Cooperative systems — Classification
and management of ITS applications
in a global context**

*Systèmes intelligents de transport — Classification et gestion des
applications de systèmes intelligents de transport dans un contexte
global*

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>



Reference number
ISO/TS 17419:2014(E)

© ISO 2014

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2014

All rights reserved. Unless otherwise specified, 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
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Abbreviated terms	4
5 Application management	5
5.1 Introduction.....	5
5.2 ITS communications architecture.....	6
5.3 PKI architecture.....	7
5.4 Regulations and policies.....	7
5.5 ITS station.....	7
5.6 Applications and messages.....	9
5.7 Communications.....	10
5.8 Identifiers and addresses summary.....	11
6 GCMA organizational framework	12
6.1 Overview.....	12
6.2 Registration of globally unique identifiers.....	13
6.3 Certification of ITS-S equipment.....	14
6.4 Certification of ITS-S application processes.....	15
6.5 Issuance of ITS-SOU certificates.....	16
6.6 Issuance of certificates for real-time operation.....	17
6.7 ITS application repository.....	17
6.8 Secure installation and maintenance of facilities and communication protocols.....	18
6.9 Registries.....	18
6.10 Wrong behaviour reporting.....	23
7 GCMA technical framework	23
7.1 Addresses and identifiers.....	23
7.2 Online management.....	27
Annex A (normative) ASN.1 modules	29
Bibliography	39

ISO/TS 17419:2014(E)

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. 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. 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

ISO/TS 17419 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems*, in collaboration with ISO Technical Committee ISO/TC 204, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

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 exchange of messages dedicated to ITS applications, and exchange of messages from ITS message sets.

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 Technical Specification.

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. The definition of ITS application classes is based on the concept of the DSRC Application entity as introduced in Reference [4], which is identified by a DSRCApplicationEntityID.

In Reference [17] ITS message sets were referred to as ITS application objects. This definition is not adopted in this Technical Specification due to the fundamentally 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 Technical Specification.

This Technical Specification is an extension towards more general and global applicability of Reference [17]. This Technical Specification introduces the term "ITS-S object" as a general reference to ITS application objects, ITS message sets and other objects that 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 ISO 24102 series of International Standards [6][7][8][9][10][11] and in the Technical specification ISO/TS 17423. This Technical Specification focuses on some management aspects related to authorized and controlled operation of ITS-S objects which requires considerations of ITS-S object identifiers, i.e. ITS-AID, ITS-MsgSetID, ITS-SUID, ITS-SCUID, addresses and protocol identifiers used in the communication protocol stack of an ITS-S, and others.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST-TS CEN ISO/TS 17419:2014](#)

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

Intelligent transport systems — Cooperative systems — Classification and management of ITS applications in a global context

1 Scope

This Technical Specification illustrates and specifies “Global Classification and Management of ITS Applications” (GCMA). It

- is based on the ITS station and communication architecture described in ISO 21217,
- 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, and
- defines and specifies management procedures at a high functional level.

iTeH STANDARD PREVIEW
(standards.iteh.ai)

2 Normative references

[SIST-TS CEN ISO/TS 17419:2014](https://standards.iteh.ai/catalog/standards/sist/04104936-1099-4f35-1bd89-f13a5f5a2a2a/iso-ts-17419-2014)

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

ISO/TS 17423, *Intelligent transport systems — Cooperative systems — ITS application requirements and objectives for selection of communication profiles*

ISO 21217, *Intelligent transport systems — Communications access for land mobiles (CALM) — Architecture*

ISO/IEC 8825-2:2008, *Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER) — Part 2*

3 Terms and definitions

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

3.1

authorization

prescription that a particular behaviour shall not be prevented

Note 1 to entry: Unlike *permission* (3.22), an authorization is an empowerment.

3.2

ITS application

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

ISO/TS 17419:2014(E)

3.3

ITS application class

group of *ITS applications* (3.2) that provide the same type of service, e.g. Electronic Fee Collection (EFC), where each application operates in a different context

3.4

ITS application identifier**ITS-AID**

globally unique, registered number identifying an *ITS application object* (3.5)

3.5

ITS application object

ITS application (3.2) or *ITS application class* (3.3) identified by a globally unique *ITS application identifier* (3.4)

3.6

ITS message

message designed for an ITS-related purpose

3.7

ITS message set

set of uniquely identified ITS messages

3.8

ITS message set identifier

globally unique, registered number identifying an *ITS message set* (3.7)

3.9

ITS registration authority

entity authorized to register *ITS-S object* (3.17) identifiers

3.10

ITS service

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

3.11

ITS trusted authority

entity authorized to issue *ITS-S object* (3.17) security credentials

3.12

ITS-S application process

element in an ITS station that performs information processing for a particular application and uses ITS-S services to transmit and receive information

3.13

ITS-S application process provisioner

functionality in an ITS-SU offering *ITS-S application processes* (3.12) for download and installation to other ITS-SUs

3.14

ITS-S communication protocol

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

3.15

ITS-S communication protocol stack

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

ITC STANDARD PREVIEW
(standards.iteh.ai)

SIST-TS CEN ISO/TS 17419:2014

<https://standards.iteh.ai/catalog/standards/sist/0db0d936-999c-425c-bd99-813a515a2e9a/sist-ts-cen-iso-ts-17419-2014>

3.16**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

3.17**ITS-S object**

entity used in ITS that may require a globally unique identifier

EXAMPLE ITS-SU, ITS-SCU, ITS application object, ITS message set, ITS-S communication protocol, ITS flow type.

3.18**ITS-S object identifier**

identifier of an *ITS-S object* ([3.17](#))

3.19**ITS-S object owner**

entity responsible for the specification (design), maintenance and registration of an *ITS-S object* ([3.17](#))

3.20**ITS-S service**

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

3.21**ITS-S unit**

implementation of an ITS station

3.22**permission**

rule that a particular behaviour is allowed to occur [SIST-TS CEN ISO/TS 17419:2014](#)

3.23**policy**

set of rules related to a particular purpose, expressed as an obligation, an *authorization* ([3.1](#)), *permission* ([3.22](#)) or a *prohibition* ([3.24](#))

3.24**prohibition**

prescription that a particular behaviour shall not occur

3.25**registration**

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

3.26**registration authority**

entity such as an organization or an automated facility that performs *registration* ([3.25](#)) of one or more types of objects

3.27**regulation**

<document>written instrument containing rules having the force of law

3.28**regulation**

<process>process of the promulgation, monitoring, and enforcement of rules defined in *regulation* ([3.27](#)), established by primary and/or delegated legislation