



SLOVENSKI STANDARD

SIST ENV 13372:2003

01-oktober-2003

Cestna transportna in prometna telematika (RTTT) – Posebna komunikacija kratkega dosega (DSRC) – Profili DRSC za uporabo RTTT

Road Traffic and Transport Telematics (RTTT) - Dedicated Short-Range Communication (DSRC) - DSRC Profiles for RTTT Applications

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: ^{SIST ENV 13372:2003} **ENV 13372:1999**
<https://standards.iteh.ai/catalog/standards/sist/2c14c026-1502-4bb9-a213-703a52fd9534/sist-env-13372-2003>

ICS:

| | | |
|-----------|---|--|
| 35.240.60 | Uporabniške rešitve IT v transportu in trgovini | IT applications in transport and trade |
|-----------|---|--|

SIST ENV 13372:2003

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST ENV 13372:2003

<https://standards.iteh.ai/catalog/standards/sist/2cf4c026-f302-4bb9-a213-703a52fd9534/sist-env-13372-2003>

EUROPEAN PRESTANDARD
PRÉNORME EUROPÉENNE
EUROPÄISCHE VORNORM

ENV 13372

February 1999

ICS 35.240.60

Descriptors: teleprocessing, road transport, traffic, traffic control, information interchange, radiocommunications, open systems interconnection, data transmission, profiles

English version

Road Traffic and Transport Telematics (RTTT) - Dedicated Short-Range Communication (DSRC) - DSRC Profiles for RTTT Applications

This European Prestandard (ENV) was approved by CEN on 22 January 1999 as a prospective standard for provisional application.

The period of validity of this ENV 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 ENV can be converted into a European Standard.

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

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/2c4c026-f302-4bb9-a213-703a52fd9534/sist-env-13372-2003>



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

| | |
|---|----------|
| 1. SCOPE | 5 |
| 2. NORMATIVE REFERENCES | 5 |
| 3. DEFINITIONS AND ABBREVIATIONS | 5 |
| 3.1 Definitions | 5 |
| 3.2 Abbreviations | 6 |
| 4. DSRC PROFILES | 7 |
| 4.1 Parameters of DSRC Physical Layer using Microwave | 7 |
| 4.2 Parameters of DSRC Physical Layer using Infrared..... | 8 |
| 4.3 Parameters in DSRC Data Link Layer..... | 9 |
| 4.4 Profiles in DSRC Application Layer..... | 10 |
| 4.5 DSRC Profiles for RTTT Applications..... | 10 |

SIST ENV 13372:2003

<https://standards.iteh.ai/catalog/standards/sist/2c4c026-f302-4bb9-a213-703a52fd9534/sist-env-13372-2003>

Foreword

This European Prestandard has been prepared by Technical Committee CEN/TC 278 "Road transport and traffic telematics", the secretariat of which is held by NNI.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

The present European Prestandard forms a part of a series of Pre-Standards defining the framework of a Dedicated Short Range Communication link in the RTTT environment. In addition to this Prestandard, the following parts will also be issued by CEN TC278 WG9 to form a complete set of European Prestandards for the DSRC link.

The complete set of Prestandards for DSRC, prepared by CEN/TC 278, consists of:

- ENV 12253 Dedicated Short-Range Communication - Physical Layer using Microwave at 5.8 GHz
- prENV XXXXX Dedicates Short-Range Communication - Physical Layer using Infrared at 850 nm (under preparation)
- ENV 12975 Dedicated Short-Range Communication - DSRC Data Link Layer: Medium Access and Logical Link Control
- ENV 12834 Dedicated Short-Range Communication - Application Layer
- prENV ISO 15625 Dedicated Short-Range Communication (DSRC) - DSRC Profiles for RTTT Applications

SIST ENV 13372:2003

WG9 consists of experts mainly from the telecommunication sector and also from the transport sector. Most active participating countries and companies / organisations are:

- Austria (Kapsch)
- France (CGA, THOMSON, ISIS, ...)
- Germany (ANT/Bosch, DASA, RWTH Aachen, Siemens, ...)
- Italy (Marconi, Autostrade, UNINFO, ...)
- Netherlands (CMG, Intercai)
- Norway (Micro Design)
- Sweden (Saab Combitech, Telia Research, Optronics)
- United Kingdom (GEC Marconi, Peek Traffic)

Additional input came from Non-European experts from USA and Japan via ISO TC204 WG15.

Introduction

Dedicated Short-range Communication (DSRC) is intended to be a communication means for Road Traffic and Transport Telematics (RTTT) applications, amongst others such as Automatic Fee Collection (AFC), Automatic Vehicle and Equipment Identification (AVI/AEI) and Traffic and Traveller Information (TTI).

The protocol stack for the DSRC is based on a three layer adaptation of the seven layer OSI model (ISO/IEC 7498-1). Each of the standards for the layers of DSRC contains some degree of variability in order to cater for different and evolving needs from existing and future RTTT applications and configurations.

For each of the layers parameters describing this variability are defined. The use of a certain set of parameter values for one layer is closely related to limitations in possible parameter values in other layers. Therefore sets of parameter values must be defined across all layers. Each set of parameter values is called a Profile and is assigned a unique identifier number.

When instances of mobile equipment arrive at the DSRC zone the use of one Profile is negotiated between the fixed equipment (which might support more than one Profile) and the mobile equipment (which might also support more than one Profile) in a way described by the DSRC layer standards.

The word Profile is a reserved word in the standard for the DSRC Application Layer and is used in the definition of the Beacon Service Table and the Vehicle Service Table respectively.

Future extension of the number of profiles defined by this European Pre-Standard, made necessary by the introduction of new applications and/or configurations, will be undertaken by means of revision of the Pre-Standard.

1. Scope

This draft European Prestandard:

- is a complement to the related standards for the DSRC-layers 1, 2 and 7.
- applies to DSRC between fixed equipment at the roadside and mobile equipment in vehicles. This standard does neither apply to vehicle to vehicle communication nor to communication between different instances of fixed equipment.
- defines a number of sets of parameter values to be used in communication between fixed and mobile equipment and assigns a unique identifier to each set. This identifier is to be used in the negotiation and initialisation procedures taking place between fixed and mobile equipment.
- supports a variety of different RTTT applications

2. Normative references

This European Prestandard incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this standard only when incorporated in it by amendment or revision. For undated references the latest of the publication referred to applies.

| | |
|------------------------|---|
| EN ISO/IEC 7498-1:1995 | <i>Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model (ISO/IEC 7498-1:1994)</i> |
| ENV 12975 | <i>Dedicated Short-Range Communication - DSRC Data Link Layer: Medium Access and Logical Link Control</i> |
| ENV 12834 | <i>Dedicated Short-Range Communication - Application Layer</i> |

3. Definitions and abbreviations

3.1 Definitions

3.1.1 Beacon Service Table

A communication service table, periodically broadcast by the fixed equipment, containing information on communication profiles and available applications in the Fixed Equipment.

3.1.2 Downlink

Communication channel on which the Fixed Equipment transmits its information.

3.1.3 Fixed Equipment

A fixed communication facility, at the roadside, with a single downlink channel and, optionally, one or more uplink channels.

3.1.4 Mobile Equipment

A mobile communication facility capable of receiving information from the Fixed Equipment on the downlink and, optionally, also capable of transmitting information on the uplink.

Page 6
ENV 13372:1999

3.1.5 On Board Equipment

See 3.1.4

3.1.6 Profile

A unique identifier for a coherent set of parameter values controlling the behavior of the DSRC.

3.1.7 Uplink

Communication channel on which Mobile Equipment transmits its information.

3.1.8 Road Side Unit

See 3.1.3

3.1.9 Vehicle Service Table

A communication service table, compiled and transmitted as a response to the Beacon Service Table by any Mobile Equipment needing to initialise interactive communication, containing information on communication profiles and available applications in the Mobile Equipment.

3.2 Abbreviations

For the purposes of this standard, the following abbreviations apply:

- BST Beacon Service Table
- DSRC Dedicated Short Range Communication
- FE Fixed Equipment
- ME Mobile Equipment
- OBU On Board Equipment [SIST ENV 13372:2003](#)
- RSU Road Side Unit [.iteh.ai/catalog/standards/sist/2c4c026-f302-4bb9-a213-716-52fd9534/sist-env-13372-2003](#)
- VST Vehicle Service Table [716-52fd9534/sist-env-13372-2003](#)

4. DSRC Profiles

4.1 Parameters of DSRC Physical Layer using Microwave

The following parameters are named and defined in the standard DSRC Physical Layer using Microwave. The summary below indicates the availability of default values.

4.1.1 Downlink parameters

| | | |
|------|--|---------|
| D 1 | Carrier Frequencies | default |
| D 2 | RSU Transmitter Spectrum Mask | default |
| D 3 | OBU Minimum Receiver Bandwidth | default |
| D 4 | Maximum E.I.R.P. | default |
| D 5 | Antenna Polarization | default |
| D 6 | Modulation | default |
| D 7 | Data Coding | default |
| D 8 | Bit Rate | default |
| D 9 | Bit Error Rate | default |
| D 10 | Wake-up Process for OBU | default |
| D 11 | Power Limits within Communication Zone | default |
| D 13 | Preamble | default |

4.1.2 Uplink parameters

| | | |
|------|---|------------------------------|
| U 1 | Sub-carrier Frequency | options: 1.5 MHz, 2.0 MHz |
| U 2 | OBU Transmitter Spectrum Mask | default |
| U 3 | RSU Minimum Receiver RF Bandwidth | default |
| U 4 | Maximum Single Sideband E.I.R.P. | default |
| U 5 | Antenna Polarization | default |
| U 6 | Sub-Carrier Modulation | default |
| U 7 | Data Coding | default |
| U 8 | Symbol Rate | default |
| U 9 | Bit Error Rate | default |
| U 11 | Power Limits within Communication Zone. | Default |
| U 12 | Minimum Conversion Gain | default |
| U 13 | Preamble / Postamble | default |

For Profiles defined by this standard the default values are used where available.