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Inteligentni transportni sistemi - Prometne in potovalne informacije prek izvedenske skupine za transportne protokole, binarni podatkovni format 1. generacije (TPEG) - 9. del: Zgoščeni podatki o prometnih dogodkih (TPEG1-TEC) (ISO/TS 18234-9:2013)

Intelligent transport systems - Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format - Part 9: Traffic event compact (TPEG1-TEC) (ISO/TS 18234-9:2013)

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Intelligente Transportsysteme - Reise- und Verkehrsinformation über Datenströme der Transportprotokoll Expertengruppe (TPEG) - Teil 9: Kompakte Verkehrsereignisse (TPEG-TEC) (ISO/TS 18234-9:2013)

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Systèmes intelligents de transport - Informations sur le trafic et le tourisme via les données de format binaire du groupe d'experts du protocole de transport, génération 1 (TPEG1) - Partie 9: Événement trafic compact (TPEG1-TEC) (ISO/TS 18234-9:2013)

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03.220.01	Transport na splošno	Transport in general
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English Version

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This Technical Specification (CEN/TS) was approved by CEN on 15 July 2013 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.

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Foreword

This document (CEN ISO/TS 18234-9:2013) has been prepared by Technical Committee ISO/TC 204 "Intelligent transport systems" in collaboration with Technical Committee CEN/TC 278 "Intelligent transport systems" the secretariat of which is held by NEN.

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.

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 18234-9:2013 has been approved by CEN as CEN ISO/TS 18234-9:2013 without any modification.

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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.

ISO/TS 18234-9 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Road transport and traffic telematics,* 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).

ISO/TS 18234 consists of the following parts, under the general title *Intelligent transport systems — Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format*:

— *Part 1: Introduction, numbering and versions (TPEG1-INV)*

— *Part 2: Syntax, semantics and framing structure (TPEG1-SSF)*

— *Part 3: Service and network information(TPEG1-SNI)*

— *Part 4: Road Traffic Message application (TPEG1-RTM)*

— *Part 5: Public Transport Information (PTI) application*

— *Part 6: Location referencing applications*

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— *Part 7: Parking information (TPEG1-PK1)*

— *Part 8: Congestion and travel-time application (TPEG1-CTT)*

— *Part 9: Traffic event compact (TPEG1-TEC)*

— *Part 10: Conditional access information (TPEG1-CAI)*

— *Part 11: Location Referencing Container (TPEG1-LRC)*

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Introduction

TPEG technology

TPEG technology uses a byte-oriented data stream format, which may be carried on almost any digital bearer with an appropriate adaptation layer. TPEG-messages are delivered from service providers to end-users and used to transfer information from the database of a service provider to an end-user's equipment.

The brief history of TPEG technology development dates back to the European Broadcasting Union (EBU) Broadcast Management Committee establishing the B/TPEG project group in autumn 1997 with the mandate to develop, as soon as possible, a new protocol for broadcasting traffic and travel-related information in the multimedia environment. TPEG technology, its applications and service features are designed to enable travel-related messages to be coded, decoded, filtered and understood by humans (visually and/or audibly in the user's language) and by agent systems.

One year later in December 1998, the B/TPEG group produced its first EBU specifications. Two Technical Specifications were released. ISO/TS 18234-2, described the Syntax, Semantics and Framing Structure, which is used for all TPEG applications. ISO/TS 18234-4 (TPEG-RTM) described the first application, for Road Traffic Messages.

Subsequently, CEN/TC 278/WG 4, in conjunction with ISO/TC 204, established a project group comprising the members of B/TPEG and they have continued the work concurrently since March 1999. Since then two further parts were developed to make the initial complete set of four parts, enabling the implementation of a consistent service. ISO/TS 18234-3 (TPEG-SNI) describes the Service and Network Information Application, which should be used by all service implementations to ensure appropriate referencing from one service source to another. ISO/TS 18234-1 (TPEG-INV), completes the series, by describing the other parts and their relationship; it also contains the application IDs used within the other parts. Additionally ISO/TS 18234-5 the Public Transport Information Application (TPEG-PTI) and ISO/TS 18234-6 (TPEG-LRC), were developed.

This Technical Specification adds another powerful application for the ISO 18234 series allowing detailed road event information to be encoded and transmitted to the user. It was developed specifically to satisfy messaging for Navigation System clients and designed to provide cause and effect in the Road Traffic events information domain. This Technical Specification includes new advanced message management and new datatypes as specified in the annexes.

TPEG applications are developed using UML modelling and a software tool is used to automatically select content which then populates this Technical Specification. Diagrammatic extracts from the model are used to show the capability of the binary coding in place of lengthy text descriptions; the diagrams do not necessarily include all relevant content possible.

This Technical Specification describes the binary data format of the on-air interface of the Traffic Event Compact application, (TPEG-TEC) with the technical version number TPEG-TEC_3.0/001.

TEC Model

The basic concept behind the TEC model is that a traffic situation is described by a primary information structure describing the most important information to present to a driver and secondary descriptions of the causes and/or more details. This model enables a traffic editor to describe complex events in a modular way allowing TEC-based system and mobile terminals to present the message as it was intended by the editor. This can be either graphical, textual, voice or a combination of those.

Next to the above mentioned requirement, it is very important to design an efficient coding scheme:

— there will be terminal devices with limited resources;

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— to be able to extract those elements early that are relevant to the driver's route, it is key to use the available bandwidth efficiently.

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Part 9:
Traffic event compact (TPEG1-TEC)

1 Scope

This Technical Specification defines the TPEG application Traffic Event Compact (TEC). It has been specifically designed to support information about traffic events, e.g. road works, traffic jams. A specific form of traffic event are local hazard warnings, which as safety-related messages, are sent with high priority to assist a driver in encountering dangerous situations (e.g. black-ice, accident behind curves, obstacles on road) unexpectedly.

Generally, TEC focuses on the following requirements:

— ensuring travel safety for the driver;

— enabling the calculation of alternative routes;

— avoiding delays (e.g. traffic jams);

— warning the driver of obstructions on route;

— informing the driver of infrastructural problems (e.g. closed petrol stations, non-functioning emergency phones).

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/TS 18234-2, *Intelligent transport systems — Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format — Part 2: Syntax, semantics and framing structure (SSF)*

ISO/TS 18234-11, *Intelligent transport systems — Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format — Part 11: Location Referencing Container (TPEG1-LRC)*

3 Terms and definitions

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