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BSI Standards Publication

Intelligent transport systems — Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format

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

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National foreword

This British Standard is the UK implementation of CEN ISO/TS 18234-3:2013. It supersedes DD CEN ISO/TS 18234-3:2006 which is withdrawn.

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

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.

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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 3: Informations relatives aux services et au réseau (TPEG1-SNI) (ISO/TS 18234-3:2013)

Intelligente Transportsysteme - Reise- und Verkehrsinformation (TPEG) über Datenströme der Transportprotokoll Expertengruppe, Generation1 (TPEG1) binäres Datenformat - Teil 3: Informationsanwendungen für Dienste und Netze (TPEG1-SNI) (ISO/TS 18234-3:2013)

This Technical Specification (CEN/TS) was approved by CEN on 14 January 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.

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Contents

Page

Foreword

This document (CEN ISO/TS 18234-3:2013) has been prepared by Technical Committee CEN/TC 278 “Road transport and traffic telematics", 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 supersedes CEN ISO/TS 18234-3:2006.

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.

Contents

Page

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 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 18234-3 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 TC 204, *Intelligent transport systems* in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO/TS 18234-3:2006), which has been technically revised.

ISO/TS 18234 consists of the following parts, under the general title *Intelligent transport systems — Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams*:

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

— *Part 2: Syntax, Semantics and Framing Structure (SSF)*

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

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

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

— *Part 6: Location referencing applications*

— *Part 7: Parking Information (TPEG-PKI)* [1)]

— *Part 8: Congestion and travel-time application (TPEC1-CTT)* [2)]

— *Part 9: Traffic event compact (TPEG1-TEC)* [3)]

— *Part 10: Conditional access information (TPEG1-CAI)* [4)]

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

1) To be published.

2) To be published.

3) To be published.

4) To be published.

Introduction

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 documents were released. Part 2 (TPEG-SSF, which became ISO/TS 18234-2) described the Syntax, Semantics and Framing structure, which is used for all TPEG applications. Part 4 (TPEG-RTM, which became ISO/TS 18234-4) described the first application, for Road Traffic Messages.

Subsequently, CEN/TC 278/WG 4, in conjunction with ISO/TC 204/WG 10, 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. Part 3 (TPEG-SNI, ISO/TS 18234-3) 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. Part 1 (TPEG-INV, ISO/TS 18234-1), completes the series, by describing the other parts and their relationship; it also contains the application IDs used within the other parts. Additionally, Part 5, the Public Transport Information Application (TPEG-PTI, ISO/TS 18234-5), was developed.

A major step forward was to develop the so-called TPEG-LOC location referencing method, which enabled both map-based TPEG-decoders and non-map-based ones to deliver either map-based location referencing or human readable text information. The original issue of ISO/TS 18234-6 described the TPEG-LOC application in detail and was used in association with the other parts of ISO/TS 18234 series to provide location referencing.

This update to the first edition of ISO/TS 18234-3 provides additional specifications for the Service and Network Information Application.

During the development of the TPEG technology a number of versions have been documented and various trials implemented using various versions of the specifications. At the time of the publication of this Technical Specification, the original parts are fully inter-workable and no specific dependencies exist.

This Technical Specification has the technical version number TPEG-SNI/3.2/001.

Intelligent transport systems — Traffic and travel information via transport protocol experts group, generation 1 (TPEG1) binary data format —

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

1 Scope

This Technical Specification establishes the method of delivering service and network information within a TPEG service. The TPEG-SNI application is designed to allow the efficient and language independent delivery of information about the availability of the same service on another bearer channel or similar service data from another service provider, directly from service provider to end-users.

The term “application” is used in TPEG specifications to describe specific applications which are at the highest layer of the ISO/OSI protocol stack (ISO/IEC 7498-1). Each TPEG application (e.g. TPEG-RTM) is assigned a unique number that is called the Application IDentification (AID). An AID is defined whenever a new application is developed. The AID is used within the TPEG-Service and Network Information Application (this document) to indicate how to process TPEG content and allows routing of data to an appropriate application decoder.

AID = 0000 is assigned to the TPEG-SNI application described in this Technical Specification.

A number of tables of information are described, which provide comprehensive options for describing services, their timing, content, geographical coverage, etc. In all TPEG streams it is mandatory to deliver to so-called GST. Additionally, it is possible to signal linkage of content between different bearers and services.

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 18234-1, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 1: Introduction, numbering and versions*

ISO/TS 18234-2:2006, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 2: Syntax, Semantics and Framing Structure (SSF)*

EN 300 401, *Radio broadcasting systems; Digital Audio Broadcasting (DAB) to mobile, portable and fixed receivers*

RFC 1738, *Uniform Resource Locators (URL)* [5)]

5) RFC 1738 can be found at http://www.ietf.org/rfc/rfc1738.txt.