PD ISO/TS 18234-8:2012

BSI Standards Publication

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

Part 8: Congestion and Travel Time application (TPEG1-CTT)

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National foreword

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

Part 8: Congestion and Travel Time application (TPEG1-CTT)

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 8: Application bouchons et temps de voyage (TPEG1-CTT)

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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 document:

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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order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn.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 18234-8 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

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 (SSF)*

— *Part 3: Service and Network Information (SNI) application*

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

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

— *Part 6: Location referencing applications*

— *Part 7: Parking Information (TPEG1-PKI)*[1)]

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

— *Part 9: Traffic event compact (TPEG1-TEC)*[2)]

1) To be published.

2) To be published.

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— *Part 10: Conditional access information (TPEG1-CAI)*[3)]

— *Part 11: Location Referencing Container (TPEG1-LRC)*[4)]

3) To be published.

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Introduction

TPEG technology uses a byte-oriented 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 are used to transfer application data from the database of a service provider to a user's equipment.

This Technical Specification describes the Congestion and Travel Time application in detail.

TPEG1-CTT is one of several applications required to provide a fully comprehensive traffic and travel information service, for example a service is likely to need public transport information, parking information and weather information. These are or will be the subject of other TPEG-application specifications.

TPEG1-CTT has been derived from earlier work, named "idio" via the FM data broadcasting system, DARC. The "idio" is the TTI service which was officially launched starting in 2001 all over South Korea. The TPEG1-CTT has become the most popular service of the many applications of DMB, after being tested and proven via both the terrestrial and satellite DMB (Digital Multimedia Broadcasting) networks.

The Broadcast Management Committee of the European Broadcast Union (EBU) established 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. The 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 public specifications. Two documents were released. ISO/TS 18234-2,TPEG-SSF, describes the syntax, semantics and framing structure which are used for all TPEG applications. ISO/TS 18234-4, TPEG-RTM describes the *first* application for Road Traffic Messages.

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 have been 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 is likely to be used by all service implementations to ensure appropriate referencing from one service source to another. ISO/TS 18234-1, TPEG-INV, completed the work, by describing the other parts and their relationships; it also contains the application IDs used within the other parts.

In April 2000, the B/TPEG group released revised Parts 1 to 4, which had all been reviewed and updated in light of the initial implementation results. Thus, a consistent suite of specifications, ready for wide-scale implementation, was submitted to the ISO commenting process.

In November 2001, after extensive response to the comments received and from many internally suggested improvements, all four parts were completed for the next stage: the Parallel Formal Vote. But a major step forward has been to develop the so-called TPEG-Loc location referencing method, which enables both map-based TPEG-decoders and non map-based ones to deliver either map-based location referencing or human readable information. ISO/TS 18234-6, TPEG-Loc, is now a separate specification and is used in association with the other parts of ISO/TS 18234 to provide comprehensive location referencing. Additionally, ISO/TS 18234-5, the Public Transport Information Application (TPEG-PTI) has been developed and been through the commenting process.

This Technical Specification provides a full specification for the Congestion and Travel Time application.

Today, traffic congestion has become a serious problem in urban areas. Some traffic congestion is considered to be caused by drivers who do not have access to traffic information. Therefore, timely provision of congestion and travel time messages to these drivers could decrease traffic congestion.

TPEG Congestion and Travel Time Messages are designed to provide information to various kinds of receivers using digital broadcasting and Internet technologies. A Congestion and Travel Time Message may be presented to the user in many different ways, including text, audio, or graphically using standard

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formats application which is designed to allow the efficient and language independent delivery of road information directly from service provider to end-users. The information provided relates to event and some status information on the road network and on associated infrastructure affecting a road journey. For example, limited information about abnormal operation of links in the network may be included, e.g. ferries, lifting-bridges.

The term “application” is used in TPEG specifications to describe specific applications, such as in this case the Congestion and Travel Time application, which comprises three information containers: the Message Management Container, the Application Event Container and the TPEG-Location Container. The first two Containers are fully described herein and the TPEG-Location Container is described in ISO/TS 18234-6.

Each TPEG application (e.g. TPEG1-CTT) is assigned a unique number, 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 (ISO/TS 18234-3 to indicate how to process TPEG content and allows routing of data to an appropriate application decoder.

AID = 0004 is assigned to the TPEG-Congestion Travel Time Message application described in this Technical Specification.

A hierarchical methodology has been developed to allow the creation of messages from a set of TPEG1-CTT tables, which are essentially word oriented and cover most needs.

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

Part 8: Congestion and Travel Time application (TPEG1-CTT)

1 Scope

This Technical Specification establishes a method for delivering Congestion and Travel Time Messages within a TPEG service.

2 Conformance

The TPEG1-CTT has been tested and proven via both terrestrial and satellite Digital Multimedia Broadcasting (DMB) networks since 2006 in Korea.

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

ISO/TS 18234-3, *Traffic and Travel Information (TTI) — TTI via Transport Protocol Expert Group (TPEG) data-streams — Part 3: Service and Network Information (SNI) application*

4 Terms and definitions

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

NOTE Definitions in this Technical Specification are in some cases derived from definitions found in the DATEX Data Dictionary (ENV 13106). TPEG-RTM is completely focused on delivering messages to end-users. For this key operational reason some definitions have a different meaning from that found in the DATEX Data Dictionary. These differences are noted in a note to the term.

4.1
cross reference information
CRI
pointer to one or more messages in the same, or another TPEG service

4.2
event description
EVE
part of a message describing an event, unplanned or planned, affecting the road or transport network, or status information, including qualifiers and quantifiers

NOTE This definition varies from the DATEX Data Dictionary definition (ENV 13106).

EXAMPLE The transport network in the case of a ferry carrying vehicles between parts of the road network.

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