



BSI Standards Publication

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

Part 10: Conditional access information
(TPEG1-CAI)

National foreword

This Published Document is the UK implementation of CEN ISO/TS 18234-10:2013.

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

A list of organizations represented on this committee can be obtained on request to its secretary.

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ISBN 978 0 580 72144 1

ICS 35.240.60

Compliance with a British Standard cannot confer immunity from legal obligations.

This Published Document was published under the authority of the Standards Policy and Strategy Committee on 31 October 2013.

Amendments issued since publication

Date	Text affected
------	---------------

ICS 35.240.60

English Version

Intelligent transport systems - Traffic and travel information via
transport protocol experts group, generation 1 (TPEG1) binary
data format - Part 10: Conditional access information (TPEG1-
CAI) (ISO/TS 18234-10:2013)

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 10: Information d'accès conditionnel (TPEG1-CAI)
(ISO/TS 18234-10:2013)

Intelligente Transportsysteme - Reise- und
Verkehrsinformationen über Datenströme der
Transportprotokoll-Experten-Gruppe (TPEG) - Teil 10:
Bedingte Zugriffsinformation (TPEG-CAI) (ISO/TS 18234-
10:2013)

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

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Foreword

This document (CEN ISO/TS 18234-10:2013) 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.

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Endorsement notice

The text of ISO/TS 18234-10:2013 has been approved by CEN as CEN ISO/TS 18234-10:2013 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;
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ISO/TS 18234-10 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*

- *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 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.

TPEG applications are developed using UML modelling and a software tool is used to automatically select content which then populates this TS. 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 Conditional Access Information application, (TPEG-CAI) with the technical version number TPEG-CAI_1.0/001.

CAI application

The basic concept behind the CAI application is to transport CAI in separate TPEG service components of a dedicated application type and to define an SNI table that contains the link between scrambled content and related CAI.

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

Part 10: Conditional access information (TPEG-CAI)

1 Scope

This Technical Specification contains the definition of the TPEG Conditional Access Information (CAI) application. It enables dedicated conditional access data, such as management messages (e.g. Control Words and Entitlement Control Messages) to be delivered to recipient client devices. This TPEG application is designed for a service provider to: establish setup, prolongation or revocation of services to a specific client device, using a limited capacity unidirectional broadcast channel and without recourse to service-client handshaking.

This TPEG application defines:

- the logical channel, for the transmission of the additional CA information (CAI);
- how the CAI is linked and synchronized to the scrambled content.

This Technical Specification is related to conditional access applied at the service component level of a TPEG service. It is an open design for the integration of various different conditional access systems, externally specified, which are signalled by the TPEG service Encryption Indicator to allow client devices to operate correctly.

2 Normative References

The following referenced documents are indispensable for the application of this Technical Specification. 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, *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)*

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 (TPEG1-SSF)*

ISO/TS 18234-3, *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)*

3 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.