

DIN EN ISO 16410-1



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Ersatz für
DIN CEN ISO/TS 16410-1
(DIN SPEC 70671):2012-01

**Elektronische Gebührenerhebung –
Konformitätsbeurteilung von Geräten nach ISO 17575-3 –
Teil 1: Struktur und Zweck des Prüfprogramms (ISO 16410-1:2017);
Englische Fassung EN ISO 16410-1:2017**

Electronic fee collection –
Evaluation of equipment for conformity to ISO 17575-3 –
Part 1: Test suite structure and test purposes (ISO 16410-1:2017);
English version EN ISO 16410-1:2017

Perception du télépéage –
Évaluation de la conformité de l'équipement à l'ISO 17575-3 –
Partie 1: Structure de la suite d'essais et objectifs des essais (ISO 16410-1:2017);
Version anglaise EN ISO 16410-1:2017

Gesamtumfang 175 Seiten

DIN-Normenausschuss Automobiltechnik (NAAutomobil)
DKE Deutsche Kommission Elektrotechnik Elektronik Informationstechnik in DIN und VDE

Nationales Vorwort

Dieses Dokument (EN ISO 16410-1:2017) wurde vom technischen Komitee CEN/TC278 „Intelligente Transportsysteme“ ausgearbeitet, dessen Sekretariat von NEN (Niederlande) gehalten wird.

Das zuständige deutsche Normungsgremium ist der Gemeinschaftsarbeitsausschuss NA 052-02-71 GA „Intelligente Verkehrssysteme“ des DIN-Normenausschusses Automobiltechnik.

Dieses Dokument enthält unter Berücksichtigung des DIN-Präsidialbeschlusses 1/2004 nur die englische Originalfassung von EN ISO 16410-1:2017 und ISO 16410-1:2017.

Dieser Teil der Norm ist Teil einer kompletten Reihe von Normen die sich mit der Sicherstellung von Interoperabilität autonomer elektronischer Gebührenerhebungssysteme beschäftigt. Innerhalb dieser Normenreihe legt diese Norm Prüfungen zur Konformitätsevaluierung von Front- und Backends fest, die den Anforderungen der ISO 17575-3 entsprechen.

Potentielle Anwender dieser Normenreihe sind Hersteller von fahrzeuginternen Einrichtungen zur elektronischen Gebührenerhebung. Die Anwendung dieser Norm garantiert dem Anwender interoperables Verhalten bei Systemen unterschiedlicher Hersteller.

Änderungen

Gegenüber DIN CEN ISO/TS 16410-1 (DIN SPEC 70671):2012-01 wurden folgende Änderungen vorgenommen:

- a) Umwandlung in eine Norm;
- b) Ergänzungen, die Änderungen in den zugrunde liegenden Grundnormen, besonders von DIN EN ISO 17575, berücksichtigen;
- c) Änderungen in den Datenelemente von DIN EN ISO 17575-1:2016-08 und DIN EN ISO 17575-3:2016-08 wurden berücksichtigt;
- d) folgende neue Prüfzwecke wurden ergänzt:
 - Festlegung von Protokollversionen,
 - Aufteilung von Mautinhalten,
 - Algorithmen zur Gebührenberechnungen,
 - Regeln zum Aufrunden,
 - Alternative Währungen;
- e) Begriffe wurden überarbeitet;
- f) editorische und formale Fehler wurden behoben;
- g) Prüfzwecke zu Kommunikationsdiensten und Regeln zu Inhaltsdaten, die nicht mehr Teil von DIN EN ISO 17575-3:2016-08 sind, wurden gestrichen.

Frühere Ausgaben

DIN CEN ISO/TS 16410-1 (DIN SPEC 70671): 2012-01

Nationaler Anhang NA (informativ)

Begriffe

Für die Anwendung dieses Dokuments gelten die folgenden Begriffe.

ISO und IEC stellen terminologische Datenbanken für die Verwendung in der Normung unter den folgenden Adressen bereit:

- IEC Electropedia: unter <http://www.electropedia.org/>
- ISO Online Browsing Platform: unter <http://www.iso.org/obp>

3.1

Gebietsabrechnung

(en: area pricing)

Abrechnung basierend auf einer Straßennutzung innerhalb eines vorgegebenen Gebiets

[QUELLE: ISO 17575-1:2016, 3.1]

3.2

Attribut

(en: attribute)

adressierbares Datenpaket, welches aus einem einzelnen *Datenelement* (3.9) oder strukturierten Sequenzen von Datenelementen besteht

[QUELLE: ISO 17575-1:2016, 3.2]

3.3

Authentifikator

(en: authenticator)

Daten, wenn möglich verschlüsselt, die zur Authentifizierung verwendet werden

[QUELLE: EN 15509:2014, 3.3]

3.4

Back End

Teil eines Backoffice-Systems, welches mit einem oder mehreren *Front Ends* (3.11) verbunden ist

[QUELLE: ISO 17575-1:2016, 3.4]

3.5

Abrechnungsobjekt

(en: charge object)

geographisches- oder straßenbezogenes Objekt zur abrechnungsbezogenen Nutzung

[QUELLE: ISO 17575-1:2016, 3.5]

3.6

Abrechnungsbericht

(en: charge report)

Informationen, die vom *Front End* (3.11) stammende Straßennutzungs- und ähnliche Informationen beinhalten

[QUELLE: ISO 17575-1:2016, 3.6]

3.7

Absperrung

(en: cordon)

Grenzlinie in einem Gebiet

[QUELLE: ISO 17575-1:2016, 3.7]

3.8

Passiergebühr

(en: cordon charging)

Abrechnung zur Überquerung einer *Absperrung* (3.7)

[QUELLE: ISO 17575-1:2016, 3.8]

3.9

Datenelement

(en: data element)

kodierte Information, welche selbst aus weiteren Basis-Informationsstrukturen bestehen kann

[QUELLE: ISO 17575-1:2016, 3.9]

3.10

Datenmenge

(en: data set)

logische Menge von *Datenelementen* (3.9) mit semantischem Bezug

[QUELLE: ISO 17575-1:2016, 3.10]

3.11

Front End

Teil eines Mautsystems bestehend aus einer *On-board Ausrüstung* (OBE, 3.13) und möglicherweise einem *Vertreter* (3.14) mit dem Straßenmautinformationen und Benutzungsdaten gesammelt, verarbeitet und an das *Back End* (3.4) übermittelt werden

[QUELLE: ISO/TS 19299:2015, 3.17]

Anmerkung 1 zum Begriff: Das Front End umfasst die OBE und möglicherweise einen Vertreter.

3.12

Layout

(en: layout)

technische Beschreibung zur Position eines Mautobjekts einschließlich deren Grenzen

[QUELLE: ISO 17575-3:2016, 3.12]

3.13**On-Board Ausrüstung****OBE**

(en: on-board equipment)

alle notwendigen Ausrüstungen innerhalb Fahrzeuges, um notwendige Funktionen zur elektronischen Gebührenerhebung (en: EFC) und Kommunikationsdienste durchzuführen

[QUELLE: ISO 17575-3:2016, 3.13]

3.14**Vertreter**

(en: proxy)

optionale Einheit des *Front Ends* (3.11) welches mit externen Einrichtungen kommuniziert und empfangene Daten in ein abgestimmtes Format überführt und an das *Back End* (3.4) übermittelt

[QUELLE: ISO 17575-1:2016, 3.13]

3.15**Straßensektionsmaut**

(en: road section tolling)

Mautprinzip, bei dem die Gebühr anfällt, wenn ein vordefinierter Straßenabschnitt benutzt wird

[QUELLE: ISO 17575-1:2016, 3.14]

3.16**Maut**

(en: toll)

Abrechnung, Steuer, oder Verpflichtungsabgabe in Verbindung einer Fahrzeugbenutzung innerhalb eines *Mautgebietes* (3.20)

[QUELLE: ISO/TS 19299:2015, 3.42]

Anmerkung 1 zum Begriff: Diese Definition ist die Verallgemeinerung der klassischen Definition der Maut als eine Gebühr, eine Steuer oder eine Abgabe zur Erlaubnis eine Schranke zu passieren, oder eine Straße oder Brücke usw. zu passieren. Die Definition beinhaltet ebenfalls als (administrative) Verpflichtung angesehene Gebühren, z. B. eine Steuer oder Abgabe.

3.17**Mautbereich**

(en: tolled area)

geografischer Bereich, in dem eine *Maut* (3.16) für die Straßennutzung erhoben wird

[QUELLE: ISO 17575-3:2016, 3.17]

3.18**Maut Kontext**

(en: toll context)

logischer Blick, welcher anhand von *Attributen* (3.2) und Funktionen der Basiselemente eines *Mautschemas* (3.22) definiert ist und aus einem einzelnen Basismautprinzip, einer räumlichen Verteilung eines *Abrechnungsobjektes* (3.5) und einem einzelnen Verhalten des betroffenen *Front Ends* (3.11) besteht

[QUELLE: ISO 17575-1:2016, 3.17]

3.19

Maut Kontextdaten

(en: toll context data)

Information welche vom verantwortlichen Mauterheber festgelegt wird und notwendig ist, um die *Maut* (3.16) für die Nutzung eines Fahrzeugs in einem bestimmten *Mautkontext* (3.18) festzusetzen und die Mauttransaktion abzuschließen

[QUELLE: ISO 12855:2015, 3.15]

3.20

Mautgebiet

(en: toll domain)

Bereich oder Teil eines Straßennetzwerks in der ein bestimmtes *Mautregimes* (3.21) angewendet wird

[QUELLE: ISO 17573:2010, 3.18]

3.21

Mautregime

(en: toll regime)

Menge von Regeln, einschließlich Vollstreckungsregeln, welche die Erhebung von *Maut* (3.16) in einem *Mautgebiet* (3.20) regeln

[QUELLE: ISO 17573:2010, 3.20]

3.22

Mautschema

(en: toll scheme)

organisatorischer Blick auf ein *Mautregime* (3.21), welcher die Akteure sowie deren Beziehungen beinhaltet

[QUELLE: ISO 17575-3:2016, 3.22]

English Version

**Electronic fee collection - Evaluation of equipment for
conformity to ISO 17575-3 - Part 1: Test suite structure
and test purposes (ISO 16410-1:2017)**

Perception du télépéage - Évaluation de la conformité
de l'équipement à l'ISO 17575-3 - Partie 1: Structure de
la suite d'essais et objectifs des essais (ISO 16410-
1:2017)

Elektronische Gebührenerhebung -
Konformitätsbeurteilung von Geräten nach ISO
17575-3 - Teil 1: Struktur und Zweck des
Prüfprogramms (ISO 16410-1:2017)

This European Standard was approved by CEN on 12 December 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

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European foreword

This document (EN ISO 16410-1:2017) 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.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2018 and conflicting national standards shall be withdrawn at the latest by June 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN ISO/TS 16410-1:2011.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 16410-1:2017 has been approved by CEN as EN ISO 16410-1:2017 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

This first edition of ISO 16410-1 cancels and replaces the first edition of ISO/TS 16410-1:2011, which has been technically revised.

The following changes have been made:

- this document has been converted from a Technical Specification to an International Standard;
- amendments have been made to reflect changes to the underlying base standards, especially ISO 17575 (all parts);
- major changes have been made regarding:
 - data element changes introduced by ISO 17575-1 and ISO 17575-3;
 - new test purposes related to:
 - protocol version handling;
 - toll context partitions;
 - fee calculation algorithm;
 - rounding rules;
 - alternative currency;
 - test purposes related to the following have been removed:
 - communications services;

- rules with respect to support of context data which are no longer required by ISO 17575-3;
- the terms and definitions have been revised;
- editorial and formal corrections, as well as changes to improve readability, have been made.

Introduction

This document is part of a series of standards that supports interoperability of autonomous EFC-systems. Autonomous systems use satellite positioning, often combined with additional sensor technologies such as gyroscopes, odometers and accelerometers, to localize the vehicle and to find its position on a map containing the charged geographic objects, such as charged roads or charged areas. From the charged objects, the vehicle characteristics, the time of day and other data that are relevant for describing road use, the tariff and ultimately, the road usage fee is determined.

Autonomous on-board equipment (OBE) operates without relying on dedicated road-side infrastructure by employing wide-area technologies such as global navigation satellite systems (GNSS) and cellular communications networks (CN). Therefore, autonomous systems may also be referred to as GNSS/CN systems.

Within the series of EFC standards, this document defines tests for conformity evaluation of Front End and Back End that comply with the requirements towards the context data specified in ISO 17575-3.

This document is based on

- ISO 17575-3, and
- the ISO 9646 series on conformance test methodology.

Electronic fee collection — Evaluation of equipment for conformity to ISO 17575-3 —

Part 1: Test suite structure and test purposes

1 Scope

The ISO 16410 series provides a suite of tests in order to assess compliance of the Front End and Back End behaviours in relation to the requirements in ISO 17575-3. This document contains the definition of such tests in the form of test purposes, listing the required initial conditions, references and individual steps in a structured textual manner. ISO 16410-2 contains the identical tests written in testing and test control notation version 3 (TTCN v3).

The test purposes defined in this document reflect the structural and semantic requirements stated in ISO 17575-3.

- Presence/absence of particular data elements (see ISO 17575-3:2016, 8.5.5);
- Semantics related to various data elements, e.g.:
 - Activation of context data and handling multiple contexts (see ISO 17575-3:2016, 8.3);
 - Handling the precedence and priority levels (see ISO 17575-3:2016, 8.5.2 to 8.5.4);
 - Uniqueness of relevant data elements (see ISO 17575-3:2016, 8.5.2 to 8.5.4);
 - Correct definition of the charge objects (see ISO 17575-3:2016, 8.5.4);
- Fee calculation algorithm (see ISO 17575-3:2016, 8.5.3.7);
- Security (see ISO 17575-3:2016, 7.2).

With regard to the individual data sets and EFC attributes defined in ISO 17575-3, the test purposes have been organized into the test suite groups, designated for the Front End and Back End respectively.

In addition to the test purposes, this document also provides proforma conformance test report templates for both the Front End and Back End test purposes and an informative statement on the usage of this document for the European electronic toll service (EETS).

For more information regarding the requirements against which the conformance is evaluated in this document, refer to ISO 17575-3.

Testing of the following behaviours and functionalities is outside the scope of this document:

- dynamic behaviour, i.e. sequence of messages and triggering events that must be exchanged/happen to fulfil certain charging scenarios;
- profiles and business logic built on top of particular pricing schemas;
- behaviour invalid of Front End and Back End, BI test purposes are not applicable for any test purpose group (as ISO 17575-3 does not specify behaviour invalid).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 17575-1, *Electronic fee collection — Application interface definition for autonomous systems — Part 1: Charging*

ISO 17575-3:2016, *Electronic fee collection — Application interface definition for autonomous systems — Part 3: Context data*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

area charging

charging based on road usage within a given area

[SOURCE: ISO 17575-1:2016, 3.1]

3.2

attribute

addressable package of data consisting of a single data element or structured sequences of *data elements* (3.9)

[SOURCE: ISO 17575-1:2016, 3.2]

3.3

authenticator

data, possibly encrypted, that is used for authentication

[SOURCE: EN 15509:2014, 3.3]

3.4

Back End

part of a back office system interfacing to one or more *Front Ends* (3.11)

[SOURCE: ISO 17575-1:2016, 3.4]

3.5

charge object

geographic or road-related object for the use of which a charge is applied

[SOURCE: ISO 17575-1:2016, 3.5]

3.6

charge report

information containing road usage and related information originated at the *Front End* (3.11)

[SOURCE: ISO 17575-1:2016, 3.6]

3.7

cordon

border line of an area

[SOURCE: ISO 17575-1:2016, 3.7]

3.8

cordon charging

charging for the crossing of a *cordon* (3.7)

[SOURCE: ISO 17575-1:2016, 3.8]

3.9

data element

coded information, which might itself consist of lower level information structures

[SOURCE: ISO 17575-1:2016, 3.9]

3.10

data set

logical set of *data elements* (3.9) with a semantic relation

[SOURCE: ISO 17575-3:2016, 3.10]

3.11

Front End

part of a tolling system consisting of an *OBE* (3.13) and possibly, a *proxy* (3.14) where road tolling information and usage data are collected and processed for delivery to the *Back End* (3.4)

[SOURCE: ISO/TS 19299:2015, 3.17]

Note 1 to entry: The Front End comprises the OBE and an optional proxy.

3.12

layout

technical description of the location of tolled objects including their borders

[SOURCE: ISO 17575-3:2016, 3.12]

3.13

on-board equipment

OBE

all required equipment on-board a vehicle for performing required EFC functions and communication services

[SOURCE: ISO 17575-3:2016, 3.13]

3.14

proxy

optional part of a *Front End* (3.11) that communicates with external equipment and processes the data received into an agreed format to be delivered to the *Back End* (3.4)

[SOURCE: ISO 17575-1:2016, 3.13]

3.15

road section charging

tolling principle where the fee is due if predefined sections of roads are used

[SOURCE: ISO 17575-1:2016, 3.14]

3.16

toll

charge, tax or duty levied in connection to using a vehicle in a *toll domain* (3.20)

[SOURCE: ISO/TS 19299:2015, 3.42]

Note 1 to entry: The definition is the generalization of the classic definition of a toll as a charge, a tax or a duty for permission to pass a barrier or to proceed along a road, over a bridge, etc. The definition also includes fees regarded as an (administrative) obligation, e.g. a tax or a duty.

3.17

tolled area

geographic area where a *toll* (3.16) is charged for road usage

[SOURCE: ISO 17575-3:2016, 3.17]

3.18

toll context

logical view as defined by *attributes* (3.2) and functions of the basic elements of a *toll scheme* (3.22) consisting of a single basic tolling principle, a spatial distribution of the *charge objects* (3.5) and a single behaviour of the related *Front End* (3.11)

[SOURCE: ISO 17575-1:2016, 3.17]

3.19

toll context data

information defined by the responsible toll charger necessary to establish the *toll* (3.16) due for using a vehicle on a particular *toll context* (3.18) and to conclude the toll transaction

[SOURCE: ISO 12855:2015, 3.15]

3.20

toll domain

area or part of a road network where a certain *toll regime* (3.21) is applied

[SOURCE: ISO 17573:2010, 3.18]

3.21

toll regime

set of rules, including enforcement rules, governing the collection of *toll* (3.16) in a *toll domain* (3.20)

[SOURCE: ISO 17573:2010, 3.20]

3.22

toll scheme

organizational view of a *toll regime* (3.21), including the actors and their relationships

[SOURCE: ISO 17575-3:2016, 3.22]

4 Abbreviated terms

ADU	Application data unit
ASN.1	Abstract syntax notation one
ATS	Abstract test suite
BI	Behaviour invalid
BV	Behaviour valid (EN 15876-1)

CCC	Compliance check communication
CN	Cellular network
DUT	Device under test
EFC	Electronic fee collection
GNSS	Global navigation satellite systems
HMI	Human machine interface
ID	Identifier
IUT	Implementation under test
OBE	On-board equipment
PCTR	Proforma conformance test report
PICS	Protocol implementation conformance statements
TP	Test purposes
TSS	Test suite structure
TTCN	Testing and test control notation
VAT	Value added tax

5 Test suite structure

5.1 Structure

Table 1 shows the test suite structure (TSS).

Table 1 — Test suite structure

Group	Type of IUT	Behaviour
Procedural	Back End	Behaviour Valid
		Behaviour Invalid not applicable
ADU Header	Back End	Behaviour Valid
		Behaviour Invalid not applicable
ADU Body – Attribute general	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Toll Context Overview and Toll Context Partition Overview	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Tariff Table and Currency Conversion Table	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Tariff Class Definition	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Local Vehicle Class Definition	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Time Class Definition	Back End	Behaviour Valid
		Behaviour Invalid not applicable

Table 1 (continued)

Group	Type of IUT	Behaviour
User Class Definition	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Toll Context Layout	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Toll Context Layout for Section Pricing	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Toll Context Layout for Area Pricing	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Toll Context Layout for Cordon Pricing	Back End	Behaviour Valid
		Behaviour Invalid not applicable
Context Handling	Front End	Behaviour Valid
		Behaviour Invalid not applicable
Charge Report	Front End	Behaviour Valid
		Behaviour Invalid not applicable

Front End related test purposes uses Charge Report message for validation which is specified in ISO 17575-1. As a precondition to run those test purposes, compliance to ISO 17575-1 shall be validated.

5.2 Reference to conformance test specifications

This document takes into account already defined test purposes for conformance to the base standards by referencing them, so that

- for test purposes that are **identical** to those defined in this document or the base standards conformance test cases, a direct reference is reported; for the reader's convenience, the title or a verbal description of the referenced test purpose is given, together with the reference,
- for test purposes that are **derived** from those defined in the base standards conformance test cases, a direct reference is reported, plus an indication on how the referred test purpose has to be modified for the profile conformance testing,
- for test purposes that are **specific** to ISO 17575-3, a complete description is given, and
- an indication on whether a test purpose is **identical**, **derived** or **specific** is given in each test purpose.

5.3 Test purposes (TP)

5.3.1 TP definition conventions

The TPs are defined following the rules shown in Table 2. All test purposes are defined in Annex A and Annex B, including the special notation and symbol conventions that shall be used. The data structures that shall be used are specified in Annex C and defined in ISO 17575-1 and ISO 17575-3.

Table 2 — TP definition rules

TP ID according to the TP naming conventions	Title
	Reference
	TP origin
	Initial condition
	Stimulus and expected behaviour

Table 2 (continued)

TP ID	The TP ID is a unique identifier. It shall be specified according to the TP naming conventions defined in 5.3.2.
Title	Short description of test purpose objective.
Reference	The reference should contain the references of the subject to be validated by the actual TP (specification reference, clause, paragraph) or the reference to the standard document defining the TP.
TP origin	Indicates if the TP is identical to a TP defined in another test standard, derived from a TP defined in another test standard or specific for this standard profile.
Initial condition	The condition defined in which initial state the IUT has to be to apply the actual TP.
Stimulus and expected behaviour	Definition of the events the tester performs and the events that are expected from the IUT to conform to the base specification.

5.3.2 TP naming conventions

Each TP is given a unique identification. This unique identification is built up to contain the following string of information:

TP_<group>_<iut>_<x>_<nn>

TP : to indicate that it is a test purpose;

<group> : which group the TP belongs to;

<iut> : type of IUT (i.e. FE or BE);

X : type of testing (i.e. Behaviour Valid tests – BV or Behaviour Invalid tests – BI);

<nn> : sequential TP number (01-99).

The naming conventions are as described in Table 3.

Table 3 — TP naming convention

Identifier: TP/<group>/<iut>/ <x>-<nn>		
<group>		
<i>applicable for BE</i>	PRO	Procedural
<i>applicable for BE</i>	ADUH	ADU Header
<i>applicable for BE</i>	ADUB	ADU Body – EFC Attribute general
<i>applicable for BE</i>	TC	Toll Context Overview and Toll Context Partition Overview
<i>applicable for BE</i>	TT	Tariff Table and Currency Conversion Table
<i>applicable for BE</i>	TACD	Tariff Class Definition
<i>applicable for BE</i>	LVCD	Local Vehicle Class Definition
<i>applicable for BE</i>	TICD	Time Class Definition
<i>applicable for BE</i>	USCD	User Class Definition
<i>applicable for BE</i>	TCL	Toll Context Layout
<i>applicable for BE</i>	TCL-S	Toll Context Layout for Section Pricing
<i>applicable for BE</i>	TCL-A	Toll Context Layout for Area Pricing
<i>applicable for BE</i>	TCL-C	Toll Context Layout for Cordon Pricing
<i>applicable for FE</i>	CH	Context Handling
<i>applicable for FE</i>	CR	Charge Report
<iut> = type of IUT	FE	Front End
	BE	Back End
x = type of testing	BV	Behaviour Valid Tests
	BI	Behaviour Invalid Tests
<nn> = sequential number (01–99)		Test Purpose Number

5.4 Conformance test report

The supplier of the Front End and Back End, respectively, is responsible for providing a conformance test report.

The supplier of the Front End shall complete the proforma conformance test report (PCTR) for Front End as defined in Annex D (notably Tables D.1 to D.4).

The supplier of the Back End shall complete the proforma conformance test report (PCTR) for Back End as defined in Annex E (notably Tables E.1 to E.4).

Annex A (normative)

Test purposes (TP) for Front End

A.1 General

This annex contains the test purposes (TP), Tables A.2 to A.61, for the conformity evaluation of the Front End to ISO 17575-3.

A.2 TP symbols conventions

A special notation and symbol convention shall be used, as defined in what follows.

Symbols are used in the description of the TPs, with meanings according to Table A.1.

Table A.1 — Description of TP symbols

SYMBOL	DESCRIPTION
$XXX.rq \Rightarrow$	The Tester sends the XXX.rq to the IUT.
$\Leftarrow YYY.rs$	The IUT sends the YYY.rs to the Tester.
$\Leftarrow YYY.rs = \{\text{attribute1}, \text{attribute2}, \text{attribute3}\}$	The IUT sends the YYY.rs to the Tester. The YYY.rs shall not consist of any attributes different than attribute1, attribute2, attribute3. If any of attributes in the list is optional, it may be missing in YYY.rs.
$\Leftarrow YYY.rs = \{\text{attribute1} = \text{value1}\}$	The IUT sends the YYY.rs to the Tester with attribute1. The value of attribute1, i.e. value1 shall be stored by the tester and will be utilized in further TP steps.
$A \equiv B$	A “is equal to” B.
$A \rightarrow B$	A “is transformed” into B.
$\emptyset$	Means “empty” or “not set”.

A.3 Context handling test purposes

A.3.1 General

These test purposes apply to ISO 17575-3Adu according to ISO 17575-3:2016, Table B.6/1, EFC Attributes according to ISO 17575-3:2016, Table B.8.

NOTE 1 No test purposes for behaviour invalid (BI) are specified, as ISO 17575-3 does not specify any behaviour invalid of the Front End.

NOTE 2 No dynamic behaviour is covered by this document. Dynamic behaviour is e.g. selection of applicable Tariff Class by the Front End depending on vehicle, time, user, location criteria.

NOTE 3 A Charge Report sent by the IUT may or may not include all data elements listed in the structure as almost all of them are optional.

A.3.2 BV test purposes

The test subgroup objectives are:

- to test the behaviour of the IUT in relation to the context activation;

— to test the behaviour of the IUT in relation to handling of multiple contexts.

Table A.2 — TP_CH_FE_BV_01

TP_CH_FE_BV_01	Verify that DUT updates its Context Data		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.3		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	ContextData1	⇒	
2	ContextData13	⇒	
3	Event defined in ContextData1 occurred		
4		⇐	ChargeReport = {protocolVersion, obeId, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
	IF (ChargeReport content according to ContextData13) THEN TP passed ELSE TP failed ENDIF		

A.3.3 BI test purposes

No BI test purposes are applicable for this TP group.

A.4 Charge Report test purposes

A.4.1 General

These test purposes apply to:

- Charge Report Configuration according to ISO 17575-3:2016, Table B.8/11;
- Precedence Level according to ISO 17575-3:2016, Table B.11/9;
- Send Charge Report If Entering according to ISO 17575-3:2016, Table B.11/8;
- Tariffs according to ISO 17575-3:2016, Table B.16;
- Rounding Rules for fees according to ISO 17575-3:2016, Table B.19/1-3;
- Supported Charge Units according to ISO 17575-3:2016, Table B.17;
- Currency Conversion Table according to ISO 17575-3:2016, Table B.23.

NOTE 1 No test purposes for behaviour invalid (BI) are specified, as ISO 17575-3 does not specify any behaviour invalid of the Front End

NOTE 2 No dynamic behaviour is covered by this document. Dynamic behaviour is, for example, selection of applicable Tariff Class by the Front End depending on vehicle, time, user and location criteria.

NOTE 3 A Charge Report sent by the IUT may or may not include all data elements listed in the structure, as almost all of them are optional.

A.4.2 BV test purposes

A.4.3 General

The test subgroup objectives are:

- to test the presence of particular data elements in the Charge Report sent by IUT in relation to the Charge Report Configuration;
- to test the absence of particular data elements in the Charge Report sent by IUT in relation to the Charge Report Configuration;
- to test the handling of the precedence level for overlapping partitions;
- to test the correctness of implementation of a fee calculation including rounding rules;
- to test the usage of the Authenticated Charge Report

by means of the syntactically and contextual correct ADU.

Table A.3 — TP_CR_FE_BV_01

TP_CR_FE_BV_01	Verify the presence of obeld data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1),	⇒	

Table A.3 (continued)

	(chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = T, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (obeld present) THEN TP passed ELSE TP failed ENDIF		

Table A.4 — TP_CR_FE_BV_02

TP_CR_FE_BV_02	Verify the absence of obeld data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1).	⇒	

Table A.4 (continued)

	<p>(tariffTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obelId = F, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } } </p>		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	<p>ChargeReport = {protocolVersion, obelId, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}</p>
4	IF (obelId NOT present) THEN TP passed ELSE TP failed ENDIF		

Table A.5 — TP_CR_FE_BV_03

TP_CR_FE_BV_03	Verify the presence of vehicleLPNr data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obeId = any,</p> <p>vehicleLPNr = T, paymentMeans = any,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = any, reportPeriod = any,</p> <p>versionInfo = any,</p> <p>sumVatForThisSession = any,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = any,</p> <p>mileage = any, listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	
2	Event defined in ChargeReportingEvents occurred		

Table A.5 (continued)

3		⇐	ChargeReport = {protocolVersion, obeId, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (vehicleLPNr present) THEN TP passed ELSE TP failed ENDIF		

Table A.6 — TP_CR_FE_BV_04

TP_CR_FE_BV_04	Verify the absence of vehicleLPNr data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.6 (continued)

	useOfCrAuthenticator = F, obeld = any, vehicleLPNr = F, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (vehicleLPNr not present) THEN TP passed ELSE TP failed ENDIF		

Table A.7 — TP_CR_FE_BV_05

TP_CR_FE_BV_05	Verify the presence of paymentMeans data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1).	⇒	

Table A.7 (continued)

	<p>(tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = T, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }</p>		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	<p>ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}</p>
4	<p>IF (paymentMeans present) THEN TP passed ELSE TP failed ENDIF</p>		

Table A.8 — TP_CR_FE_BV_06

TP_CR_FE_BV_06		Verify the absence of paymentMeans data element in the Charge Report	
TP origin		Specific	
Reference		ISO 17575-3:2016, 8.5.5.3.2	
Initial condition		Front End is initialized and can accept Context Data.	
		OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.	
		Authentication is not used.	
Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obeId = any,</p> <p>vehicleLPNr = any, paymentMeans = F,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = any, reportPeriod = any,</p> <p>versionInfo = any,</p> <p>sumVatForThisSession = any,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = any,</p> <p>mileage = any, listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	
2	Event defined in ChargeReportingEvents occurred		

Table A.8 (continued)

3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (paymentMeans not present) THEN TP passed ELSE TP failed ENDIF		

Table A.9 — TP_CR_FE_BV_07

TP_CR_FE_BV_07	Verify the presence of tollContext data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.9 (continued)

	useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = T, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} { usageStatementContent = any, chargeReportConfigurationVersion = version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (tollContext present) THEN TP passed ELSE TP failed ENDIF		

Table A.10 — TP_CR_FE_BV_08

TP_CR_FE_BV_08	Verify the absence of tollContext data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1),	⇒	

Table A.10 (continued)

	<p>(localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = F, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }</p>		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (tollContext not present) THEN TP passed ELSE TP failed ENDIF		

Table A.11 — TP_CR_FE_BV_09

TP_CR_FE_BV_09	Verify the presence of chargeReportFinalRecipient data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = T, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } } }</p>	⇒	

Table A.11 (continued)

2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (chargeReportFinalRecipient present) THEN TP passed ELSE TP failed ENDIF		

Table A.12 — TP_CR_FE_BV_10

TP_CR_FE_BV_10	Verify the absence of chargeReportFinalRecipient data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.12 (continued)

	useOfCrAuthenticator = F, obelId = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = F, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obelId, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (chargeReportFinalRecipient not pres- ent) THEN TP passed ELSE TP failed ENDIF		

Table A.13 — TP_CR_FE_BV_11

TP_CR_FE_BV_11	Verify the presence of timeofReport data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1),	⇒	

Table A.13 (continued)

	<pre> (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = T, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } } </pre>		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (timeOfReport present) THEN TP passed ELSE TP failed ENDIF		

Table A.14 — TP_CR_FE_BV_12

TP_CR_FE_BV_12	Verify the absence of timeOfReport data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obelId = any,</p> <p>vehicleLPNr = any, paymentMeans = any,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = F, reportPeriod = any,</p> <p>versionInfo = any,</p> <p>sumVatForThisSession = any,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = any,</p> <p>mileage = any,</p> <p>listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	

Table A.14 (continued)

2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (timeOfReport not present) THEN TP passed ELSE TP failed ENDIF		

Table A.15 — TP_CR_FE_BV_13

TP_CR_FE_BV_13	Verify the presence of reportPeriod data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.15 (continued)

	useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = T, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (reportPeriod present) THEN TP passed ELSE TP failed ENDIF		

Table A.16 — TP_CR_FE_BV_14

TP_CR_FE_BV_14	Verify the absence of reportPeriod data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1),	⇒	

Table A.16 (continued)

	(localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = F, versionInfo = any, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (reportPeriod not present) THEN TP passed ELSE TP failed ENDIF		

Table A.17 — TP_CR_FE_BV_15

TP_CR_FE_BV_15	Verify the presence of versionInfo data element in the Charge Report
TP origin	Specific
Reference	ISO 17575-3:2016, 8.5.5.3.2
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.

Table A.17 (continued)

Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obeld = any,</p> <p>vehicleLPNr = any, paymentMeans = any,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = any, reportPeriod = any,</p> <p>versionInfo = T,</p> <p>sumVatForThisSession = any,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = any,</p> <p>mileage = any, listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	
2	Event defined in ChargeReportingEvents occurred		

Table A.17 (continued)

3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (versionInfo present) THEN TP passed ELSE TP failed ENDIF		

Table A.18 — TP_CR_FE_BV_16

TP_CR_FE_BV_16	Verify the absence of versionInfo data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.18 (continued)

	useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = F, sumVatForThisSession = any, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (versionInfo not present) THEN TP passed ELSE TP failed ENDIF		

Table A.19 — TP_CR_FE_BV_17

TP_CR_FE_BV_17	Verify the presence of sumVatForThisSession data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1),	⇒	

Table A.19 (continued)

	(localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = T, accountStatus = any, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (sumVatForThisSession present) THEN TP passed ELSE TP failed ENDIF		

Table A.20 — TP_CR_FE_BV_18

TP_CR_FE_BV_18		Verify the absence of sumVatForThisSession data element in the Charge Report	
TP origin		Specific	
Reference		ISO 17575-3:2016, 8.5.5.3.2	
Initial condition		Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.	
Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obeId = any,</p> <p>vehicleLPNr = any, paymentMeans = any,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = any, reportPeriod = any,</p> <p>versionInfo = any,</p> <p>sumVatForThisSession = F,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = any,</p> <p>mileage = any, listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	
2	Event defined in ChargeReportingEvents occurred		

Table A.20 (continued)

3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (sumVatForThisSession not present) THEN TP passed ELSE TP failed ENDIF		

Table A.21 — TP_CR_FE_BV_19

TP_CR_FE_BV_19	Verify the presence of accountStatus data element in the Charge Report		
TP Origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data.		
	OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.		
	Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1), (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = {	⇒	

Table A.21 (continued)

	useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = T, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } }		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (accountStatus present) THEN TP passed ELSE TP failed ENDIF		

Table A.22 — TP_CR_FE_BV_20

TP_CR_FE_BV_20	Verify the absence of accountStatus data element in the Charge Report		
TP origin	Specific		
Reference	ISO 17575-3:2016, 8.5.5.3.2		
Initial condition	Front End is initialized and can accept Context Data. OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs. Authentication is not used.		
Stimulus and expected behaviour			
	Tester		IUT
1	Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = { (tollContextOverview = value as in ContextData1), (tollContextPartitionOverview = value as in ContextData1), (tariffTable = value as in ContextData1), (currencyConversionTable = value as in ContextData1), (tariffClassDefinition = value as in ContextData1),	⇒	

Table A.22 (continued)

	<pre> (localVehicleClassDefinition = value as in ContextData1), (timeClassDefinition = value as in ContextData1), (userClassDefinition = value as in ContextData1), (tollContextLayout = value as in ContextData1), (chargeReportingEvents = value as in ContextData1), (chargeReportConfiguration = v1) } }where: v1 = { chargeReportContent = { useOfCrAuthenticator = F, obeld = any, vehicleLPNr = any, paymentMeans = any, tollContext = any, chargeReportFinalRecipient = any, timeOfReport = any, reportPeriod = any, versionInfo = any, sumVatForThisSession = any, accountStatus = F, chargeReportCounter = any, mileage = any, listOfCCCAttributes = any} usageStatementContent = any, chargeReportConfigurationVersion = { version = as in ContextData1, validFrom = as in ContextData1 } } </pre>		
2	Event defined in ChargeReportingEvents occurred		
3		⇐	ChargeReport = {protocolVersion, obeld, vehicleLPNr, paymentMeans, serviceProviderContract, tollContext, chargeReportFinalRecipient, timeOfReport, reportPeriod, versionInfo, usageStatementList, sumVatForThisSession, accountStatus, chargeReportCounter, mileage, listOfCCCAttributes}
4	IF (accountStatus not present) THEN TP passed ELSE TP failed ENDIF		

Table A.23 — TP_CR_FE_BV_21

TP_CR_FE_BV_21	Verify the presence of chargeReportCounter data element in the Charge Report
TP origin	Specific
Reference	ISO 17575-3:2016, 8.5.5.3.2
Initial condition	<p>Front End is initialized and can accept Context Data.</p> <p>OBE belonging to the Front End is located within geographic borders defined in both Context Data ADUs.</p> <p>Authentication is not used.</p>

Table A.23 (continued)

Stimulus and expected behaviour			
	Tester		IUT
1	<p>Iso17575-3Adu = {Iso17575-3aduHeader, Iso17575-3aduBody = {</p> <p>(tollContextOverview = value as in ContextData1),</p> <p>(tollContextPartitionOverview = value as in ContextData1),</p> <p>(tariffTable = value as in ContextData1),</p> <p>(currencyConversionTable = value as in ContextData1),</p> <p>(tariffClassDefinition = value as in ContextData1),</p> <p>(localVehicleClassDefinition = value as in ContextData1),</p> <p>(timeClassDefinition = value as in ContextData1),</p> <p>(userClassDefinition = value as in ContextData1),</p> <p>(tollContextLayout = value as in ContextData1),</p> <p>(chargeReportingEvents = value as in ContextData1),</p> <p>(chargeReportConfiguration = v1) }</p> <p>}where:</p> <p>v1 = { chargeReportContent = {</p> <p>useOfCrAuthenticator = F, obeld = any,</p> <p>vehicleLPNr = any, paymentMeans = any,</p> <p>tollContext = any,</p> <p>chargeReportFinalRecipient = any,</p> <p>timeOfReport = any, reportPeriod = any,</p> <p>versionInfo = any,</p> <p>sumVatForThisSession = any,</p> <p>accountStatus = any,</p> <p>chargeReportCounter = T, mileage = any,</p> <p>listOfCCCAttributes = any}</p> <p>usageStatementContent = any,</p> <p>chargeReportConfigurationVersion = {</p> <p>version = as in ContextData1,</p> <p>validFrom = as in ContextData1 }</p> <p>}</p>	⇒	
2	Event defined in ChargeReportingEvents occurred		