

English Version

Electronic fee collection - Evaluation of on-board and  
roadside equipment for conformity to EN 15509

Perception de télépéage - Évaluation de la conformité  
de l'équipement embarqué et de l'équipement au sol à  
l'EN 15509

Elektronische Gebührenerhebung -  
Konformitätsprüfung von Fahrzeuggeräten und  
straßenseitigen Einrichtungen nach EN 15509

This European Standard was approved by CEN on 13 January 2025.

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## European foreword

This document (EN 15876:2025) has been prepared by 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of an identical text or by endorsement, at the latest by October 2025, and conflicting national standards shall be withdrawn at the latest by October 2025.

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 EN 15876:2023.

This fourth edition of EN 15876 incorporates the following main modifications compared with the previous version:

- | Correction of the superseded references to ESTI EN 300 674 1:2004 , which are replaced by references to ESTI EN 300 674 2 1:2022, ESTI EN 300 674 2 2:2019 and ETSI TS 104 022:2024;
- | Amendments to improve clarity of the document.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

## Introduction

CEN/TC 278 has produced a set of standards that support interoperable DSRC-EFC-systems e.g., EN ISO 14906 (a "toolbox" for defining EFC-application transaction) and EN ISO 14907-2 (EFC application interface conformance tests for on-board units). However, these standards are only of an enabling nature and do not ensure technical interoperability. Therefore, EN 15509, *Electronic fee collection – Interoperability application profile for DSRC* was developed to support technical interoperability between EFC-systems.

This document specifies the test suite structure and the test purposes for conformity evaluation of on-board and roadside equipment designed for compliance with the requirements of EN 15509. A test standard for evaluation of conformity of on-board and roadside equipment is a necessary element for coherent, practical and effective appraisal of products' compliance to EN 15509.

EN 15876 provides the necessary foundation for verification of the implementation of the interoperability requirements as stated in EN 15509:

- industry is provided with an easy-to-use toolbox for product assessment;
- operators can easily assess conformity to EN 15509 and reference to the standard in tendering processes;
- authorities and joint undertakings may reference to the test standard when stating interoperability requirements;
- certification organisations are given an effective tool for certification of products.



## 1 Scope

This document specifies the test suite structure (TSS) and test purposes (TPs) for evaluation of on-board equipment (OBE) and roadside equipment (RSE) to EN 15509.

Normative Annex A presents the test purposes for the OBE.

Normative Annex B presents the test purposes for the RSE.

Normative Annex C provides the protocol conformance test report (PCTR) proforma for OBE.

Normative Annex D provides the PCTR proforma for RSE.

## 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.

EN 15509:2023, *Electronic fee collection — Interoperability application profile for DSRC*

EN 12834:2003, *Road transport and traffic telematics - Dedicated Short Range Communication (DSRC) - DSRC application layer*

EN ISO 3166-1:2020, *Codes for the representation of names of countries and their subdivisions — Part 1: Country code (ISO 3166-1)*

EN ISO 14816:2019, *Road transport and traffic telematics — Automatic vehicle and equipment identification — Numbering and data structure (ISO 14816)*

EN ISO 14906:2023, *Electronic fee collection — Application interface definition for dedicated short-range communication (ISO 14906:2022)*

EN ISO 14907-2:2021, *Electronic fee collection — Test procedures for user and fixed equipment — Part 2: Conformance test for the on-board unit application interface (ISO 14907-2:2021)*

ISO/TS 17573-2:2020, *Electronic fee collection — Systems architecture for vehicle-related tolling Part 2: Vocabulary*

ETSI TS 104 022:2024, *Transport and Traffic Telematics (TTT); Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5 795 MHz to 5 815 MHz frequency band; performance tests*

ETSI EN 300 674-2-1:2022, *Transport and Traffic Telematics (TTT); Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5 795 MHz to 5 815 MHz frequency band; Part 2: Harmonised Standard for access to radio spectrum; Sub-part 1: Road Side Units (RSU)*

ETSI EN 300 674-2-2:2019, *Transport and Traffic Telematics (TTT); Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in 5 795 MHz to 5 815 MHz frequency band; Part 2: Harmonised Standard for access to radio spectrum; Sub-part 2: On-Board Units (OBU)*

ETSI/TS 102 486-1-2:2008, *Intelligent Transport Systems (ITS); Road Transport and Traffic Telematics (RTTT); Test specifications for Dedicated Short Range Communication (DSRC) transmission equipment; Part 1: DSRC data link layer: medium access and logical link control; Sub-Part 2: Test Suite Structure and Test Purposes (TSS&TP)*

ETSI/TS 102 486-2-2:2008, *Intelligent Transport Systems (ITS); Road Transport and Traffic Telematics (RTTT); Test specifications for Dedicated Short Range Communication (DSRC) transmission equipment; Part 2: DSRC application layer; Sub-Part 2: Test Suite Structure and Test Purposes (TSS&TP)*

### **3 Terms and definitions**

For the purposes of this document, the terms and definitions given in ISO/TS 17573-2:2020 apply.

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

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

### **4 Abbreviations**

For the purposes of this document, the following abbreviations apply throughout the document unless otherwise specified.

APDU	application protocol data unit
AP	application process
ATS	abstract test suite
BI	behaviour invalid (i.e., invalid behaviour tests)
BST	beacon service table
BV	behaviour valid (i.e., valid behaviour tests)
DSRC	dedicated short-range communication
EFC	electronic fee collection
ICS	implementation conformance statement
IUT	implementation under test
LLC	logical link control
LPDU	LLC protocol data unit
MAC	medium access control
OBE	on-board equipment
OBU	on-board unit
PCTR	protocol conformance test report
PDU	protocol data unit
PICS	protocol implementation conformance statement
PIXIT	protocol implementation extra information for testing
RSE	roadside equipment
RSU	roadside unit
SCTR	system conformance test report



TP	test purposes
TSS	test suite structure
VST	vehicle service table

## 5 Conformance

The conformance tests shall be performed as specified in Annex A and Annex B.

The conformity assessment body of the OBE and RSE, respectively, is responsible for providing a conformance test report.

The conformity assessment body of the OBE shall complete the protocol conformance test report (PCTR) for the OBE as specified in Annex C.

The conformity assessment body of the RSE shall complete the PCTR for the RSE as specified in Annex D.

NOTE The PCTR forms a basis for the manufacturer's declaration of conformity.

## 6 Test Suite Structure

### 6.1 Structure

Table 1 shows the test suite structure (TSS) including its subgroups specified for the conformance testing.

**Table 1 — Test Suite Structure**

Group	Type of IUT	Behaviour
Physical layer	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
DLC MAC sublayer	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
DLC LLC sublayer	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
Application layer – Functions	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
Application Layer – Data	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
Application Layer – Security Level 0	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour
Application Layer – Security	OBE	Valid behaviour

Group	Type of IUT	Behaviour
Level 1	RSE	Invalid behaviour
		Valid behaviour
		Invalid behaviour
Application Layer – Transactions	OBE	Valid behaviour
		Invalid behaviour
	RSE	Valid behaviour
		Invalid behaviour

Physical layer tests are to be performed in a radio wave laboratory. They will not form part of the abstract test suite (ATS).

## 6.2 Reference to Conformance Specifications

Conformance to a profile standard implies conformance to the related base standards; hence, a number of test cases for the profile standard are exactly the same as the conformance test cases for the related base standards. Other test cases are derived from the base standards conformance test cases, by applying some restrictions or choices in e.g. the parameters values, according to the elements stated in the profile standard. Finally, specific conformance test cases for the profile standard are identified for statements contained in the profile standard, which have no equivalence in the base standards. These latter cases cover for example the security algorithms and functions that are specified in the profile standard. This document considers existing conformance test purposes for the base standards by referencing them, so that:

- For test purposes that are identical to those specified in the base standards conformance test cases (see e.g. ETSI/TS 102 486-1-2:2008 or ETSI/TS 102 486-2-2:2008) a direct reference is reported. For 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 specified 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 the standard profile, a complete description is given.

An indication on whether a test purpose is identical, derived, or specific is given in each test purpose.

## 6.3 Test Purposes

### 6.3.1 TP Definition Conventions

The TPs are specified in tables with a header that contains a TP ID as specified in the sub-clause 6.3.2 and a title. The content of these tables is following the rules shown in Table 2.



**Table 2 — TP Table and Header Content**

Note that the reference field generally points to the clause of the base standard EN 15509:2023. As the same standard contains the Protocol Implementation Conformance Statement proforma, where appropriate a reference to the relevant table of the PICS is given either in this field or in the text introducing the group of Test Purposes.

### 6.3.2 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 among those specified in Table 1 — Test Suite Structure does the TP apply to;
- <iut> : type of IUT (i.e. OBE or RSE);
- X : type of testing (i.e. Valid Behaviour tests – BV, or Invalid Behaviour tests – BI);
- <nn> : sequential TP number (01-99).

The naming conventions are as described in Table 3 — TP Naming Conventions.

**Table 3 — TP Naming Conventions**

Identifier:		TP/<group>/<	
<group>		PHY	Physical layer
		MAC	MAC sublayer
		LLC	LLC sublayer
		AP-0BAS	Application layer – I Kernel support Security level 0
		AP-0FUN	Application layer – T Kernel support Security level 0
		AP-0DAT	Application layer – Data attributes support Security Level 0
		AP-0SEC	Application layer – Security Level 0 support
		AP-0TRA	Application layer – Transaction support Security level 0
		AP-1BAS	Application layer – I Kernel support Security level 1
		AP-1FUN	Application layer – T Kernel support Security level 1

Identifier:		
TP/<group>/<		
	AP-1DAT	Application layer – Data attributes support Security Level 1
	AP-1SEC	Application layer – Security Level 1 support
	AP-1TRA	Application layer – Transaction support Security level 1
	AP-0BAS	Application layer – Initialisation phase support Security level 0
	AP-0GET	Application layer - GET-rq PDU test purposes, security level 0
	AP-0SET	Application layer - SET-rq PDU test purposes, security level 0
	AP-0STA	Application layer - GET-STAMPED-rq PDU test purposes, security level 0
	AP-0MMI	Application layer - SET-MMI-rq PDU test purposes security level 0
	AP-0ECH	Application layer - ECHO-rq PDU test purposes, security level 0
	AP-0REL	Application layer - EVENT-REPORT-rq PDU test purposes, security level 0
	AP-1BAS	Application layer - initialization phase test purposes, security level 1
	AP-1GET	Application layer - GET-rq PDU test purposes, security level 1
	AP-1SET	Application layer - SET-rq PDU test purposes, security level 1
	AP-1STA	Application layer - GET-STAMPED-rq PDU test purposes, security level 1
	AP-1MMI	Application layer - SET-MMI-rq PDU test purposes security level 1
	AP-1ECH	Application layer - ECHO-rq PDU test purposes, security level 1
<iut> = type of IUT	OBE	On-board equipment
	RSE	Roadside equipment
x = Type of testing	BV	Valid Behaviour Tests
	BI	Invalid Behaviour Tests
<nn> = sequential number	(01-99)	Test Purpose Number

## Annex A (normative)

### Test purposes for on-board equipment

#### A.1 General

This annex specifies the test purposes (TP) for the conformity evaluation of on-board equipment (OBE) to EN 15509:2023.

OBE and OBU have been used as terms with the same or similar meaning in the standardization of DSRC and DSRC-based EFC within CEN and ETSI. Previously developed relevant standards used the term OBU with the meaning OBE as specified in this document. When referring to relevant tests in other documents, this document uses the terms of the referenced source, which explains why the term OBU is often used in this Annex.

#### A.2 Physical Layer

##### A.2.1 BV Test Purposes

Table A.1 to Table A.9 specify the physical layer BV test purposes.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.1 — TP/PHY/OBU/BV/01 — Dynamic range – sensitivity**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.2.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.2.2 and Clause 4.3.2.2.

**Table A.2 — TP/PHY/OBU/BV/02 — Dynamic range – upper power limit for communication**

<b>TP Origin</b>	Identical to ETSI TS 104 022:2024, Clause 9.1.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI TS 104 022:2024, Clause 9.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI TS 104 022:2024, Clause 9.1 and Clause 7.2.1. .

**Table A.3 — TP/PHY/OBU/BV/03 — Cut-off power level**

<b>TP Origin</b>	Identical to ETSI TS 104 022:2024, Clause 9.2.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI TS 104 022:2024, Clause 9.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI TS 104 022:2024, Clause 9.2 and Clause 7.2.2.

**Table A.4 — TP/PHY/OBU/BV/04 — Conversion gain**

<b>TP Origin</b>	Identical to ETSI TS 104 022:2024, Clause 9.3.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI TS 104 022:2024, Clause 9.3.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI TS 104 022:2024, Clause 9.3 and Clause 7.2.3.

**Table A.5 — TP/PHY/OBU/BV/05 — Maximum equivalent isotropic radiated power**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.1.2.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.2 and Clause 4.3.1.2.

**Table A.6 — TP/PHY/OBU/BV/06 — Frequency error**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.1.3.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.3.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.3 and Clause 4.3.1.3.

**Table A.7 — TP/PHY/OBU/BV/07 — Transmitter spectrum mask**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.1 and Clause 4.3.1.1.

**Table A.8 — TP/PHY/OBU/BV/08 — Transmitter unwanted emissions**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.1.4.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.1.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-2:2019, , Clause 5.3.1.4 and Clause 4.3.1.4.



**Table A.9 — TP/PHY/OBU/BV/09 — Receiver spurious emissions**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-2:2019, Clause 5.3.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-2:2019, Clause 5.3.2.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-21:2019, Clause 5.3.2.1 and Clause 4.3.2.1.

## A.2.2 BI Test Purposes

BI test purposes group do not apply for Layer 1.

## A.3 MAC

### A.3.1 BV Test Purposes

Table A.10 to Table A.17 specify the MAC BV test purposes.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.10 — TP/MAC/OBU/BV/01 — Receive downlink frames – maximum length**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/01.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/01.

**Table A.11 — TP/MAC/OBU/BV/02 — Receive downlink frames within T1**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/02.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/02.

**Table A.12 — TP/MAC/OBU/BV/03 — Timing constraints for public uplink windows**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/03.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/03.

**Table A.13 — TP/MAC/OBU/BV/04 — Receive downlink frames within T2**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/04.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/04.

**Table A.14 — TP/MAC/OBU/BV/05 — Timing constraints for private uplink windows**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/05.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/05.

**Table A.15 — TP/MAC/OBU/BV/06 — S-bit and L-bit in MAC control field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/06.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/06.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/06.

**Table A.16 — TP/MAC/OBU/BV/07 — Manage S-bit state variable**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/07.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/07.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/07.

**Table A.17 — TP/MAC/OBU/BV/08 — Random selection of N5 public uplink windows**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/08.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/08.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BV/08.

### A.3.2 BI Test Purposes

Table A.18 to Table A.41 specify the MAC BI test purposes.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table A.18 — TP/MAC/OBU/BI/01 — Manage double-bit errors in the LID, MAC control and LPDU fields**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/01.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/01.

**Table A.19 — TP/MAC/OBU/BI/02 — Detect and manage double-bit errors in the FCS field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/02.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/02.

**Table A.20 — TP/MAC/OBU/BI/03 — Detect and manage a block of 15 bits errors**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/03.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/03.

**Table A.21 — TP/MAC/OBU/BI/04 — Detect and manage the abort sequence in the LPDU field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/04.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/04.

**Table A.22 — TP/MAC/OBU/BI/05 — Detect and manage the abort sequence at the end of a downlink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/05.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/05.

**Table A.23 — TP/MAC/OBU/BI/06 — Detect and manage a too long downlink frame in accordance with N2**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/06.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/06.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/06.



**Table A.24 — TP/MAC/OBU/BI/07 — Detect and manage wrong format of LID**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/07.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/07.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/07.

**Table A.25 — TP/MAC/OBU/BI/08 — Detect and manage missing MAC control field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/08.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/08.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/08.

**Table A.26 — TP/MAC/OBU/BI/09 — Detect and manage wrong A-bit in MAC control field in broadcast frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/09.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/09.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/09.

**Table A.27 — TP/MAC/OBU/BI/10 — Detect and manage wrong D-bit in MAC control field in broadcast frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/10.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/10.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/10.

**Table A.28 — TP/MAC/OBU/BI/11 — Detect and manage wrong D-bit in MAC control field in private frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/11.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/11.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/11.



**Table A.29 — TP/MAC/OBU/BI/12 — Detect and manage wrong L-bit in MAC control field in broadcast frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/12.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/12.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/12.

**Table A.30 — TP/MAC/OBU/BI/13 — Detect and manage wrong L-bit in MAC control field in private frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/13.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/13.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/13.

**Table A.31 — TP/MAC/OBU/BI/14 — Detect and manage wrong C/R-bit in MAC control field of a PrWa frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/14.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/14.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/14.

**Table A.32 — TP/MAC/OBU/BI/15 — Detect and manage a wrong MAC control field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/15.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/15.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/15.

**Table A.33 — TP/MAC/OBU/BI/16 — Detect and manage blocked signals**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/16.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/16.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/16.

**Table A.34 — TP/MAC/OBU/BI/17 — Detect and manage blocked end flag**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/17.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/17.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/17.

**Table A.35 — TP/MAC/OBU/BI/18 — Detect and manage blocked start flag**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/18.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/18.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/18.

**Table A.36 — TP/MAC/OBU/BI/19 — Detect and manage broadcast LID where expecting private LID**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/19.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/19.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/19.

**Table A.37 — TP/MAC/OBU/BI/20 — Detect and manage multicast LID where expecting private LID**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/20.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/20.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/20.

**Table A.38 — TP/MAC/OBU/BI/21 — Detect and manage wrong A-bit in MAC control field in private frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/21.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/21.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/21.

**Table A.39 — TP/MAC/OBU/BI/22 — Manage wrong A-bit in MAC control field in private downlink frame with ACn**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/22.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/22.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/22.

**Table A.40 — TP/MAC/OBU/BI/23 — Detect and manage wrong private LID**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/23.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/23.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/23.

**Table A.41 — TP/MAC/OBU/BI/24 — Verify that the OBU can manage retransmission of PrWRq**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/24.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/24.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/OBU/BI/24.

## A.4 LLC

### A.4.1 BV Test Purposes

Table A.42 to Table A.46 specify the LLC BV test purposes.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.42 — TP/LLC/OBU/BV/01 — Exchange UI commands**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/01.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/01.

**Table A.43 — TP/LLC/OBU/BV/02 — Manage ACn data transmission**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/02.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/02.

**Table A.44 — TP/LLC/OBU/BV/03 — Manage ACn data exchange**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/03.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/03.



**Table A.45 — TP/LLC/OBU/BV/04 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-1-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	

**Table A.46 — TP/LLC/OBU/BV/05 — Manage data response Procedure I**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/05.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BV/05.

#### A.4.2 BI Test Purposes

Table A.47 to Table A.53 specify the LLC BI test purposes.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table A.47 — TP/LLC/OBU/BI/01 — Detect and manage corrupted LLC control field when expecting UI command**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/01.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/01.

**Table A.48 — TP/LLC/OBU/BI/02 — Detect and manage invalid LPDU with fractional number of octets in length**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/02.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/02.

**Table A.49 — TP/LLC/OBU/BI/03 — Detect and manage corrupted LLC control field when expecting ACn command**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/03.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/03.



**Table A.50 — TP/LLC/OBU/BI/04 — Detect and manage LPDU containing acknowledged connectionless LLC command control field when LID is multicast or broadcast**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/04.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/04.

**Table A.51 — TP/LLC/OBU/BI/05 — Detect and manage invalid LPDU with fractional number of octets in length**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/05.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/05.

**Table A.52 — TP/LLC/OBU/BI/06 — Detect and manage an invalid ACn command with P=1 and no LSDU.**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/06.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/06.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/06.

**Table A.53 — TP/LLC/OBU/BI/07 — Detect and manage duplicate ACn commands**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/07.
<b>Reference</b>	EN 15509:2023, 6.1.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/07.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/OBU/BI/07.

## A.5 Application Layer

### A.5.1 General

For the description of the application layer test purposes, a special notation and symbol convention is used. Table A.54 explains this convention.

**Table A.54 — Description of TP Symbols**

SYMBOL	DESCRIPTION
XXX.rq $\Rightarrow$	The Tester sends the XXX.rq PDU to the IUT
$\Leftarrow$ YYY.rs	The IUT sends the YYY.rs PDU to the Tester
$A \equiv B$	Test Purpose A "is congruent to" Test Purpose B. The notation Test Purpose A $\equiv$ Test Purpose B means that the Test Purpose A is the same as Test Purpose B. If differences in parameters or parameter values have to be applied, these differences are indicated in the text immediately below.
$A \rightarrow B$	Object A "is transformed" into Object B. So a notation like "Table X $\rightarrow$ Table Y" means that, for the scope of the Test Purpose, any reference of Table X should be changed into references to Table Y.
=	Means "assignment". That is, a notation like "accessCredentials = a value" means that the field accessCredentials is given a value.
$\emptyset$	Means "empty" or "not set". So, a notation like "accessCredentials = $\emptyset \rightarrow$ accessCredentials = calculated value", for a given Test Purpose, means "change all occurrences in which the field accessCredentials has not been assigned to calculation of the value accessCredentials to a given value".

## A.5.2 Structure of BST and VST

### A.5.2.1 BST

The BST general structure, as is *transmitted* to the OBU, shall be in accordance with Table A.55 — BST, General Structure.

Table A.55 — BST, General Structure

			Length	Allowed Values
T-APDUs			4 bit	'1000' indicating initialisation-request (BST)
			1 bit (nonmandApplications opt.)	0/1
rsu	manufacturerid		16 bits	In accordance with EN ISO 14816:2019.
	individualid		27 bits	as specified by theconformity assessment body
time			32 bits	UNIX real time
profile			1 bit (Profile ext.)	0 ( = no extension)
			7 bits	In accordance with EN 12834:2003, Annex A.
mandApplications			1 bit (mandApplications ext.)	0 ( = no extension)
			7 bits (number of applications)	M
	EFC Application		1 bit (eid opt.)	0 ( = eid not present)
			1 bit (parameter opt.)	0 ( = parameter not present)
		aid	1 bit (aid ext.)	0 ( = no extension)
			5 bits	1 ( = electronic-fee-collection)
	Applicatio n 2 (not EFC)		1 bit (eid opt.)	0/1
			1 bit (parameter opt.)	0/1
		aid	1 bit (aid ext.)	0 ( = no extension)
			5 bits	In accordance with DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.
		eid	1 bit (eid ext.)	0 ( = no extension)
			7 bits	any
		parameter		In accordance with ApplicationContextMark, as specified in EN 12834:2003, Annex A.
	...		...	...
	Applicatio n M (not EFC)		1 bit (eid opt.)	0/1
			1 bit (parameter opt.)	0/1
		aid	1 bit (aid ext.)	0 ( = no extension)
			5 bits	In accordance with DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.
		eid	1 bit (eid extension)	0 ( = no extension)
			7 bits	any
		parameter		In accordance with ApplicationContextMark, as specified in EN 12834:2003, Annex A.
nonmandA p			1 bit (mandApplications ext.)	0 ( = no extension)
			7 bits (number of applications)	N
	Application 1 (not EFC)		...	See “Application 2 (not EFC)” of mandApplications
	...		...	...
	Application N (not EFC)		...	See “Application 2 (not EFC)” of mandApplications
profileList			1 bit (profileList ext.)	0 ( = no extension)
			7 bits (number of profiles)	K
	Profile 1	1 bit (Profile ext.)	0 ( = no extension)	
		7 bits	In accordance with the Profile specified in EN 12834:2003, Annex A.	
	...		...	...
	Profile K	1 bit (Profile ext.)	0 ( = no extension)	
		7 bits	In accordance with the Profile specified in EN 12834:2003, Annex A.	



## A.5.2.2 VST

The VST general structure, as is *transmitted* by the OBU, shall be in accordance with Table A.56 — VST, General Structure and Table A.57 — VST, General Structure for security level 1.

Table A.56 — VST, General Structure

					Length	Allowed Values		
T-APDUs					4 bits	'1001' indicating initialisation-response (VST)		
fill					4 bits	'0000'		
profile					1 bit (Profile ext.)	0 (= no extension)		
					7 bits	In accordance with the Profile specified in EN 12834:2003, Annex A.		
applications					1 bit (applications ext.)	0 (= no extension)		
					7 bits (number of applic.)	M		
	EFCApplication	aid				1 bit (eid opt.)	1 (= eid present)	
						1 bit (parameter opt.)	1 (= parameter present)	
						1 bit (aid ext.)	0 (= no extension)	
						5 bits	1 (= electronic-fee-collection)	
						eid	1 bit (eid ext.)	0 (= no extension)
							7 bits	any ( ≠ other eid used in this VST)
		parameter	EFC-ContextMark	contract Provider	1 bit (Container ext.)	0 (= no extension)		
					7 bits (Container CHOICE)	2 (= OCTET STRING)		
					1 bit (octet string ext.)	0 (= no extension)		
					7 bits (octet string length)	6		
				typeOf Contract	10 bits (CountryCode)	In accordance with EN ISO 3166-1:2020		
					14 bits (IssuerIdentifier)	In accordance with EN ISO 14816:2019		
				context Version	16 bits	any		
					1 bit (contextVersion ext.)	0 (= no extension)		
					7 bits	any		
	Application 2				1 bit (eid opt.)	0/1		
					1 bit (parameter opt.)	0/1		
		aid	1 bit (aid ext.)	0 (= no extension)				
			5 bits	In accordance with DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.				
		eid	1 bit (eid ext.)	0 (= no extension)				
			7 bits	any ( ≠ other eid used in this VST)				
		parameter		In accordance with ApplicationContextMark, as specified in EN 12834:2003, Annex A.				
		::		...	...			
	ApplicationM				1 bit (eid opt.)	0/1		
					1 bit (parameter opt.)	0/1		
		aid	1 bit (aid ext.)	0 (= no extension)				
			5 bits	In accordance with DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.				
		eid	1 bit (eid extension)	0 (= no extension)				
			7 bits	any ( ≠ other eid used in this VST)				
		parameter		In accordance with ApplicationContextMark, as specified in EN 12834:2003, Annex A.				
		obeConfiguration					1 bit (obeStatus opt.)	0/1
	equipmentClass				15 bits	any		
manufacturerID				16 bits	any			
obeStatus				16 bits	valid status			

Table A.57 — VST, General Structure for security level 1

				Length	Allowed Values
<b>Fill</b>				4 bits	Any
<b>Profile</b>				1 bit (Profile ext.)	0 (= no extension)
				7 bits	In accordance with the Profile specified in EN 12834:2003, Annex A.
<b>applications</b>				1 bit (applications ext.)	0 (= no extension)
				7 bits (number of applic.)	M
	<i>EFC Application</i>			1 bit (eid opt.)	1 (= eid present)
				1 bit (parameter opt.)	1 (= parameter present)
		aid		1 bit (aid ext.)	0 (= no extension)
				5 bits	1 (= electronic-fee-collection)
		eid		1 bit (eid ext.)	0 (= no extension)
				7 bits	any (≠ other eid used in this VST)
		parameter		1 bit (Container ext.)	0 (= no extension)
				7 bits (Container CHOICE)	2 (= OCTET STRING)
				1 bit (octet string ext.)	0 (= no extension)
				7 bits (octet string length)	16
			contract Provider	10 bits (CountryCode)	In accordance with EN ISO 3166-1:2020
				14 bits (IssuerIdentifier)	In accordance with EN ISO 14816:2019
			typeOf Contract	16 bits	any
			context Version	1 bit (contextVersion ext.)	0 (= no extension)
				7 bits	any
				1 bit (Container ext.)	0 (= no extension)
				7 bits (Container CHOICE)	2 (= OCTET STRING)
				1 bit (octet string ext.)	0 (= no extension)
				7 bits (octet string length)	2
		AC_CR_Reference	AC_CR_MasterKeyRef	8 bits	any
			AC_CR_Diversifier	8 bits	any
				1 bit (Container ext.)	0 (= no extension)
				7 bits (Container CHOICE)	2 (= OCTET STRING)

				Length	Allowed Values	
				1 bit (octet string ext.)	0 ( = no extension)	
				7 bits (octet string length)	4	
			RndOBE	32 bits	any	
	Application 2			1 bit (eid opt.)	0/1	
				1 bit (parameter opt.)	0/1	
		aid		1 bit (aid ext.)	0 ( = no extension)	
				5 bits	In accordance with the DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.	
		eid		1 bit (eid ext.)	0 ( = no extension)	
				7 bits	any ( ≠ other eid used in this VST)	
		parameter		In accordance with the ApplicationContextMark as specified in EN 12834:2003, Annex A.		
		...		...	...	
	Application M			1 bit (eid opt.)	0/1	
				1 bit (parameter opt.)	0/1	
		aid		1 bit (aid ext.)	0 ( = no extension)	
				5 bits	In accordance with the DSRCApplicationEntityID, as specified in EN 12834:2003, Annex A.	
		eid		1 bit (eid extension)	0 ( = no extension)	
				7 bits	any ( ≠ other eid used in this VST)	
		parameter		In accordance with the ApplicationContextMark, as specified in EN 12834:2003, Annex A.		
		obeConfiguration				1 bit (obeStatus opt.)
	equipmentClass			15 bits	any	
manufacturerID			16 bits	any		
obeStatus			16 bits	any		

### A.5.3 PDUs Parameters

#### A.5.3.1 Parameters of request PDUs for security level 0

The format of the request APDUs for the security level 0 shall be in accordance with the following tables:

- Table A.58 — GET-Rq parameters for security level 0;
- Table A.59 — SET-Rq parameters for security level 0;
- Table A.60 — ACTION-Rq parameters for security level 0;
- Table A.61 — EVENT-REPORT-Rq parameters for security level 0.



**Table A.58 — GET-Rq parameters for security level 0**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.16
GET-Rq	fill	=
	eid	
	accessCredentials OPTIONAL	prohibited
	iid OPTIONAL	
	attributeIdList OPTIONAL	mandatory

**Table A.59 — SET-Rq parameters for security level 0**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.18
SET-Rq	fill	=
	mode	
	eid	
	accessCredentials OPTIONAL	prohibited
	attrList	=
	iid OPTIONAL	prohibited

**Table A.60 — ACTION-Rq parameters for security level 0**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.20
ACTION-Rq	mode	=
	eid	
	actionType	
	accessCredentials OPTIONAL	prohibited
	actionParameter OPTIONAL	mandatory
	iid OPTIONAL	prohibited

**Table A.61 — EVENT-REPORT-Rq parameters for security level 0**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.22
EVENT-REPORT-Rq	mode	=
	Eid	
	eventType	
	accessCredentials OPTIONAL	prohibited
	eventParameter OPTIONAL	
	iid OPTIONAL	

### A.5.3.2 Parameters of request PDUs for security level 1

The valid format of the request APDUs for the security level 1 shall be in accordance with the following tables:

- Table A.62 — GET-Rq parameters for security level 1;
- Table A.63 — SET-Rq parameters for security level 1;
- Table A.64 — ACTION-Rq parameters for security level 1;
- Table A.65 — EVENT-REPORT-Rq parameters for security level 1.

**Table A.62 — GET-Rq parameters for security level 1**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.16
GET-Rq	Fill	=
	Eid	
	accessCredentials OPTIONAL	mandatory
	iid OPTIONAL	prohibited
	attributeIdList OPTIONAL	mandatory

**Table A.63 — SET-Rq parameters for security level 1**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.18
SET-Rq	Fill	=
	mode	
	Eid	
	accessCredentials OPTIONAL	mandatory
	attrList	=
	iid OPTIONAL	prohibited

**Table A.64 — ACTION-Rq parameters for security level 1**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.20
ACTION-Rq	mode	=
	eid	
	actionType	
	accessCredentials OPTIONAL	mandatory
	actionParameter OPTIONAL	
	iid OPTIONAL	prohibited

**Table A.65 — EVENT-REPORT-Rq parameters for security level 1**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.22
<b>EVENT-REPORT-Rq</b>	mode	=
	eid	
	eventType	
	accessCredentials OPTIONAL	prohibited
	eventParameter OPTIONAL	
	iid OPTIONAL	

**A.5.3.3 Parameters of response PDUs**

The valid format of the response APDUs shall be in accordance with the following tables:

- Table A.66 — GET-Rs parameters;
- Table A.67 — SET-Rs parameters;
- Table A.68 — ACTION-Rs parameters.

**Table A.66 — GET-Rs parameters**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.17
<b>GET-Rs</b>	fill	=
	eid	
	iid OPTIONAL	prohibited
	attributelist OPTIONAL	mandatory
	ret OPTIONAL	

**Table A.67 — SET-Rs parameters**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.19
<b>SET-Rs</b>	Fill	=
	Eid	
	lid OPTIONAL	prohibited
	ret OPTIONAL	mandatory



**Table A.68 — ACTION-Rs parameters**

	EN 12834:2003, Annex A	EN 15509:2023, B.4.5.5 Table B.21
<b>ACTION-Rs</b>	Fill	=
	Eid	
	lid OPTIONAL	prohibited
	responseParameter OPTIONAL	mandatory
	Ret OPTIONAL	

#### A.5.4 Application I-kernel test purposes for OBE, security level 0 (AP-0BAS)

##### A.5.4.1 Data Structures

The Test Purposes in clause A.5.4 are applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for OBE, B.4.3C.4.4, Table CB3.

For the conformance tests specified in clause A.5.4, the BST parameters specified in Table A.69 — BST1: valid BST shall be transmitted to the IUT. Invalid values are indicated in **boldface**.

**Table A.69 — BST1: valid BST**

			Length	Values
			1 bit (nonmandApplications opt.)	0 ( = nonmandApplications not present)
rsu	manufacturerid		16 bits	registered value
	individualid		27 bits	any
time			32 bits	any
profile			1 bit (Profile ext.)	0 ( = no extension)
			7 bits	0
mandApplications			1 bit (mandApplications ext.)	0 ( = no extension)
			7 bits (number of applications)	1
	EFC Application		1 bit (eid opt.)	0 ( = eid not present)
			1 bit (parameter opt.)	0 ( = parameter not present)
		aid	1 bit (aid ext.)	0 ( = no extension)
			5 bits	1 ( = electronic-fee-collection)
profileList			1 bit (profileList ext.)	0 ( = no extension)
			7 bits (number of profiles)	0 ( = list empty)

**A.5.4.2 BV test purposes**

Table A.70 to Table A.79 specify the application I-kernel BV test purposes for OBE with security level 0.

Test subgroup objective:

a) to test the behaviour of the IUT in relation to:

- 1) valid BST;
- 2) valid EVENT-REPORT-Rq (Release);

b) to test the IUT support of:

- 1) BeaconId;
- 2) Time;
- 3) Profile;
- 4) Applications;
- 5) LID.

**Table A.70 — TP/AP-OBAS/ObU/BV/01 — Receive and manage INITIALISATION.request (BST)**

<b>TP Origin</b>	Identical to TP/AL-I/ObU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/ObU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/ObU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.4.1.

**Table A.71 — TP/AP-OBAS/ObU/BV/02 — Receive and manage EVENT-REPORT.request (RELEASE) with mode=0**

<b>TP Origin</b>	Identical to TP/AL-I/ObU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/ObU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/ObU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.4.1.

**Table A.72 — TP/AP-OBAS/ObU/BV/03 — Read and manage the BeaconID in the BST**

<b>TP Origin</b>	Identical to TP/AL-I/ObU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/ObU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/ObU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.4.1.

**Table A.73 — TP/AP-0BAS/OBU/BV/04 — Read and manage time of reception of BST in parameter Time in BST**

<b>TP Origin</b>	Identical to TP/AL-I/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.4.1.

**Table A.74 — TP/AP-0BAS/OBU/BV/05 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	

**Table A.75 — TP/AP-0BAS/OBU/BV/06 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	

**Table A.76 — TP/AP-0BAS/OBU/BV/07 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	

**Table A.77 — TP/AP-0BAS/OBU/BV/08 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	



**Table A.78 — TP/AP-OBAS/OBU/BV/09 — Manage profile selection**

<b>TP Origin</b>	Identical to TP/AL-I/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.4.1.

**Table A.79 — TP/AP-OBAS/OBU/BV/10 — Verify that the IUT replies to a BST with a VST**

<b>TP Origin</b>	Specific			
<b>Reference</b>	EN 15509:2023, 6.1.4			
<b>Initial condition</b>	IUT not in sleep mode and not yet initialized			
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>		<b>IUT</b>
	1	<b>BST1</b>	⇒	
	2		⇐	<b>VST</b>
	3	Verify length and allowed values of VST (see Table A.56 – VST, General Structure)		
	4	IF verification performed in step 3 is NOT OK THEN TP failed		

**A.5.4.3 BI test purposes**

Table A.80 to Table A.81 specify the application I-kernel BI test purposes for OBE with security level 0.  
Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table A.80 — TP/AP-OBAS/OBU/BI/01 — Manage profile selection**

<b>TP Origin</b>	Identical to TP/AL-I/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.4.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.4.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.4.2.

**Table A.81 — TP/AP-OBAS/OBU/BI/02 — Manage applications**

<b>TP Origin</b>	Identical to TP/AL-I/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.4.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-I/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.4.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-I/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.4.2.

## A.5.5 Application T-kernel test purposes for On-Board Unit, security level 0 (AP-0FUN)

### A.5.5.1 General

The Test Purposes specified in Table A.82 to Table 108 are applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for OBU, B.4.3, Table B.3.

### A.5.5.2 BV test purposes

Table A.82 to Table A.102 specify the application T-kernel BV test purposes for OBE with security level 0.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.82 — TP/AP-0FUN/OBU/BV/01 — Receive GET.request and manage GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/01 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.83 — TP/AP-0FUN/OBU/BV/02 — Receive SET.request and manage SET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/02 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.84 — TP/AP-0FUN/OBU/BV/03 — Receive SET.request with mode=1 and GET.request, manage SET.response and GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/03 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.85 — TP/AP-0FUN/OBU/BV/04 — Receive SET.request with mode=0 and GET.request, manage GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/04 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.86 — TP/AP-0FUN/OBU/BV/05 — Receive SET.request with mode=0 and GET.request, manage GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/05 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/05 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/05 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.87 — TP/AP-0FUN/OBU/BV/06 — Receive SET.request with mode=0 and LID=broadcast after init and GET.request, manage GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/06 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/06 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/06 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.88 — TP/AP-0FUN/OBU/BV/07 — Receive SET.request with mode=0 and LID=broadcast without init and GET.request, manage GET.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/07 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/07 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/07 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.89 — TP/AP-0FUN/OBU/BV/08 — Receive ACTION.request with mode=1, manage ACTION.response with LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/08 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/08 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/08 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.90 — TP/AP-0FUN/OBU/BV/09 — Receive ACTION.request with mode=0 and LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/09 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.



**Table A.91 — TP/AP-0FUN/OBU/BV/10 — Receive ACTION.request with mode=0 and LID=private**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/10 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/10 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/10 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.92 — TP/AP-0FUN/OBU/BV/11 — Receive ACTION.request with mode=0 and LID=broadcast**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/11 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/11 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/11 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.93 — TP/AP-0FUN/OBU/BV/12 — Receive ACTION.request with mode=0 and LID=broadcast**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/12 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/12 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/12 in ETSI/TS 102 486-2-2:2008, 5.2.1. NOTE Request without accessCredentials.

**Table A.94 — TP/AP-0FUN/OBU/BV/13 — Receive and manage non-fragmented APDUs with random PDU number**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/13 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/13 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/13 in ETSI/TS 102 486-2-2:2008, 5.2.1.

**Table A.95 — TP/AP-0FUN/OBU/BV/14 — Receive and manage multiplexed APDUs from two different applications**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/14 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/14 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/14 in ETSI/TS 102 486-2-2:2008, 5.2.1.

**Table A.96 — TP/AP-0FUN/OBU/BV/15 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	

**Table A.97 — TP/AP-0FUN/OBU/BV/16 — Receive and manage concatenated and chained APDUs from a single application**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BV/16 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BV/16 in ETSI/TS 102 486-2-2:2008, 5.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BV/16 in ETSI/TS 102 486-2-2:2008, 5.2.1.

**Table A.98 — TP/AP-0FUN/OBU/BV/17 — Support of DSRC L7 GET**

<b>TP Origin</b>	Identical to TC03-A in EN ISO 14907-2:2021, C.2.3.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TC03-A in EN ISO 14907-2:2021, C.2.3.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC03-A in EN ISO 14907-2:2021, C.2.3.1. NOTE Request without accessCredentials.

**Table A.99 — TP/AP-0FUN/OBU/BV/18 — Support of DSRC L7 SET**

<b>TP Origin</b>	Identical to TC04-A in EN ISO 14907-2:2021, C.2.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TC04-A in EN ISO 14907-2:2021, C.2.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC04-A in EN ISO 14907-2:2021, C.2.4.1. NOTE Request without accessCredentials.

**Table A.100 — TP/AP-0FUN/OBU/BV/19 — Support of DSRC EFC GET STAMPED**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1. NOTE Request without accessCredentials.

**Table A.101 — TP/AP-0FUN/OBU/BV/20 — Support of DSRC EFC SET MMI**

<b>TP Origin</b>	Identical to TC20-A in EN ISO 14907-2:2021, C.2.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TC20-A in EN ISO 14907-2:2021, C.2.4.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC20-A in EN ISO 14907-2:2021, C.2.4.1. NOTE Request without accessCredentials.

**Table A.102 — TP/AP-0FUN/OBU/BV/21 — Support of DSRC EFC ECHO**

<b>TP Origin</b>	Identical to TC25-A in EN ISO 14907-2:2021, C.3.5.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TC25-A in EN ISO 14907-2:2021, C.3.5.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC25-A in EN ISO 14907-2:2021, C.3.5. NOTE Request without accessCredentials.

**A.5.5.3 BI test purposes**

Table A.103 to Table A.108 specify the applicationT-kernel BI test purposes for OBE with security level 0.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table A.103 — TP/AP-0FUN/OBU/BI/01 — Receive and manage PDUs to Broadcast kernel with initialised OBU**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BI/01 in ETSI/TS 102 486-2-2:2008, 5.2.2.

**Table A.104 — TP/AP-0FUN/OBU/BI/02 — Receive and manage PDUs to Broadcast kernel with awake but not yet initialised OBU**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BI/02 in ETSI/TS 102 486-2-2:2008, 5.2.2.

**Table A.105 — TP/AP-0FUN/OBU/BI/03 — Receive and manage non-fragmented PDUs with wrong fragment counter value with initialised OBU**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BI/03 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BI/03 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BI/03 in ETSI/TS 102 486-2-2:2008, 5.2.2.



**Table A.106 — TP/AP-0FUN/OBU/BI/04 — Receive and manage non-fragmented PDUs with wrong fragment counter value with awake but not yet initialised OBU**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BI/04 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BI/04 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BI/04 in ETSI/TS 102 486-2-2:2008, 5.2.2.

**Table A.107 — TP/AP-0FUN/OBU/BI/05 — Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008**

<b>TP Origin</b>	
<b>Reference</b>	
<b>Initial condition</b>	
<b>Stimulus and Expected Behaviour</b>	



**Table A.108 — TP/AP-0FUN/OBU/BI/06 — Receive and manage concatenated and chained APDUs from a single application with chaining error**

<b>TP Origin</b>	Identical to TP/AL-T/OBU/BI/06 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	In accordance with TP/AL-T/OBU/BI/06 in ETSI/TS 102 486-2-2:2008, 5.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TP/AL-T/OBU/BI/06 in ETSI/TS 102 486-2-2:2008, 5.2.2.

**A.5.6 Application data attributes test purposes, security level 0 (AP-0DAT)****A.5.6.1 General**

The Test Purposes specified in Table A.110 to Table 129 are applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for OBE, B.4.3, Table B.3.

**A.5.6.2 Data attributes specification**

The attribute lengths and values shall be in accordance with the specifications given in the documents that are listed in Table A.109 — Data Group Specification.

**Table A.109 — Data Group Specification**

Data Groups	Attributes	AttrId	Specification of ...	
			Length	Allowed Values
PAYMENT	PaymentMeans	32	EN 15509:2023, 6.1.4, Table 2	EN ISO 14906:2023, 8.7, Table 47 & Annex A
VEHICLE	VehicleLicencePlateNumber	16		EN 15509:2023 Annex A, Table A.2
	VehicleClass	17		
	VehicleDimensions	18		EN ISO 14906:2023, 8.4, Table 43 & Annex A
	VehicleAxles	19		
	VehicleWeightLimits	20		
	VehicleSpecificCharacteristics	22		
EQUIPMENT	EquipmentOBUID	24		EN 15509:2023 Annex A, Table A.3
	EquipmentStatus	26		
RECEIPT	ReceiptData1	33		EN ISO 14906:2023, 8.3, Table 42 & Annex A
	ReceiptData2	34		
CONTRACT	EFC-ContextMark	0		EN ISO 14906:2023, 8.2, Table 41 & Annex A

### A.5.6.3 BV test purposes

Table A.110 to Table A.124 specify the application data attributes BV test purposes for OBE with security level 0.

Test subgroup objective:

- a) to test the behaviour of the IUT in relation to the support of mandatory attributes (in allowed length and allowed values) as specified in the following list:
  - 1) Payment;
  - 2) Vehicle;
  - 3) Equipment;
  - 4) Receipt;
  - 5) Contract.
- b) to test for syntactically and contextual correct PDUs:
  - 1) GET;
  - 2) GET\_STAMPED;
  - 3) SET.

**Table A.110 — TP/AP-0DAT/OBU/BV/01 — Attribute encoding tests – GET**

<b>TP Origin</b>	Identical to TC03-A in EN ISO 14907-2:2021, C.2.3.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	OBU initialised and ready to accept a GET-request.
<b>Stimulus and Expected Behaviour</b>	TC03-A in EN ISO 14907-2:2021, C.2.3.1 NOTE Request without accessCredentials.

**Table A.111 — TP/AP-0DAT/OBU/BV/02 — Attribute encoding tests – SET**

<b>TP Origin</b>	Identical to TC04-A in EN ISO 14907-2:2021, C.2.4.1.
<b>Reference</b>	EN 15509:2023, 6.1.4
<b>Initial condition</b>	OBU initialised and ready to accept a SET-request.
<b>Stimulus and Expected Behaviour</b>	TC04-A in EN ISO 14907-2:2021, C.2.4.1 NOTE Request without accessCredentials.

**Table A.112 — TP/AP-0DAT/OBU/BV/03 — Verify that the OBU supports the read by means of GET.rq of the Vehicle data group attributes**

<b>Detailed description</b>	<p>Verify that the OBU supports the read (by means of GET.rq) of the <i>Vehicle</i> data group attributes, i. e.:</p> <ul style="list-style-type: none"> <li>- <i>VehicleLicencePlateNumber</i>,</li> <li>- <i>VehicleClass</i>,</li> <li>- <i>VehicleDimensions</i>,</li> <li>- <i>VehicleAxles</i>,</li> <li>- <i>VehicleWeightLimits</i>,</li> <li>- <i>VehicleSpecificCharacteristics</i></li> </ul>			
<b>TP Origin</b>	Specific			
<b>Reference</b>	EN 15509:2023, 6.1.4			
<b>Initial condition</b>	OBU initialised and ready to accept a GET-request			
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>		<b>IUT</b>
	1	<pre>GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '16'D - - LicencePlateNumber, '17'D - - Class, '18'D - - Dimensions, '19'D - - Axles, '20'D - - WeightLimits, '22'D - - SpecificCharacteristics } }</pre>	⇒	
	2		⇐	<pre>GET.rs = { fill, eid, iid = Ø, attrList = { ('16'D, v1), ('17'D, v2), ('18'D, v3), ('19'D, v4), ('20'D, v5), ('22'D, v6) }, returnStatus }</pre>
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4	Verify length and allowed values of v1 ÷ v6 (see Table A.109 – Data Group Specification)		
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF		

**Table A.113 — TP/AP-0DAT/OBU/BV/04 — Verify that the OBU supports the read by means of GET of the *Vehicle* data group attributes, one at the time**

TP Origin		Specific		
Reference		EN 15509:2023, 6.1.4		
Initial condition		OBU initialised and ready to accept a GET-request		
		Tester		IUT
Stimulus and Expected Behaviour	1	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '16'D - - LicencePlateNumber } }	⇒	
	2		←	GET.rs = { fill, eid, iid = Ø, attrList = { ('16'D, v1) }, returnStatus }
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '17'D - - Class } }	⇒	
	5		←	GET.rs = { fill, eid, iid = Ø, attrList = { ('17'D, v2) }, returnStatus }
	6	Perform step 3		
	7	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '18'D - - Dimensions } }	⇒	
	8		←	GET.rs = { fill, eid, iid = Ø, attrList = { ('18'D, v3) }, returnStatus }
	9	Perform step 3		
	10	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '19'D - - Axles } }	⇒	
	11		←	GET.rs = { fill, eid, iid = Ø, attrList = { ('19'D, v4) }, returnStatus }
	12	Perform step 3		
	13	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '20'D - - WeightLimits } }	⇒	
	14		←	GET.rs = { fill, eid, iid = Ø, attrList = { ('20'D, v5) }, returnStatus }
	15	Perform step 3		



<b>TP Origin</b>		Specific		
<b>Reference</b>		EN 15509:2023, 6.1.4		
<b>Initial condition</b>		OBU initialised and ready to accept a GET-request		
		<b>Tester</b>		<b>IUT</b>
	16	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '22'D - SpecificCharacteristics } }	⇒	
	17		⇐	GET.rs = { fill, eid = ?, iid = Ø, attrList = { ('22'D, v6) }, returnStatus }
	18	Perform step 3		
	19	Verify length and allowed values of v1 ÷ v6 (Table A.109 – Data Group Specification)		
	20	IF verification performed in step 19 was successful THEN TP passed ELSE TP failed ENDIF		

**Table A.114 — TP/AP-0DAT/OBU/BV/05 — Verify that the OBU supports the read (by means of GET.rq) of the Equipment data group attributes.**

<b>Detailed description</b>	<b>Verify that the OBU supports the read by means of GET.rq of the <i>Equipment</i> data group attributes, i. e.:</b> <ul style="list-style-type: none"> <li>- <b><i>EquipmentOBUID</i></b>,</li> <li>- <b><i>EquipmentStatus</i></b></li> </ul>			
<b>TP Origin</b>	Specific			
<b>Reference</b>	EN 15509:2023, 6.1.4			
<b>Initial condition</b>	OBU initialised and ready to accept a GET-request			
		<b>Tester</b>		<b>IUT</b>
<b>Stimulus and Expected Behaviour</b>	1	GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '24'D - - EquipmentOBUID '26'D - - EquipmentStatus } }	⇒	
	2		⇐	GET.rs = { fill, eid, iid Ø, attrList = { ('24'D, v1), ( '26'D, v2) }, returnStatus }
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4	Verify length and allowed values of v1 ÷ v2 (Table A.109 – Data Group Specification)		
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF		

**Table A.115 — TP/AP-0DAT/OBU/BV/06 — Verify that the OBU supports the read by means of GET of the *Equipment* data group attributes, one at the time**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a GET-request		
Stimulus and Expected Behaviour	Tester		IUT
	1 GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '24'D - - EquipmentOBUId } }	⇒	
	2		GET.rs = { fill, eid, iid = Ø ⇐ attrList = { ('24'D, v1) }, returnStatus }
	3 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4 GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '26'D - - EquipmentStatus } }	⇒	
	5		GET.rs = { fill, eid, iid = Ø ⇐ attrList = { ('26'D, v2) }, returnStatus }
	6 Perform step 3		
	7 Verify length and allowed values of v1 ÷ v2 (Table A.109 – Data Group Specification)		
	8 IF verification performed in step 7 was successful THEN TP passed ELSE TP failed ENDIF		

**Table A.116 — TP/AP-0DAT/OBU/BV/07 — Verify that the OBU supports the read by means of GET.rq of the Receipt data group attributes.**

<b>Detailed description</b>	<b>Verify that the OBU supports the read (by means of GET.rq) of the <i>Receipt</i> data group attributes, i. e.:</b> <ul style="list-style-type: none"> <li>- <i>ReceiptData1</i>,</li> <li>- <i>ReceiptData2</i></li> </ul>		
<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a GET-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<pre>GET.rq = { fill = 0, eid = VST. DSRC-eid,   accessCredentials = Ø, iid = Ø,   attrIdList = { '33'D - - ReceiptData1,     '34'D - - ReceiptData2 } }</pre>	⇒
	2		<pre>GET.rs = { fill, eid, iid   Ø,   attrList = { ('33'D, v1),     ('34'D, v2) },   returnStatus }</pre>
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed	
	4	Verify length and allowed values of v1 ÷ v2 (Table A.109 – Data Group Specification)	
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF	

**Table A.117 — TP/AP-0DAT/OBU/BV/08 — Verify that the OBU supports the read by means of GET of the *Receipt* data group attributes, one at the time**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a GET-request		
Stimulus and Expected Behaviour	Tester		IUT
	1 <code>GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '33'D - - ReceiptData1 } }</code>	⇒	
	2		<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('33'D, v1) }, returnStatus }</code>
	3 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4 <code>GET.rq = {fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '34'D - - ReceiptData2 } }</code>	⇒	
	5		<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('34'D, v2) }, returnStatus }</code>
	6 Perform step 3		
	7 Verify length and allowed values of v <sub>1</sub> ÷ v <sub>2</sub> (Table A.109 – Data Group Specification)		
	8 IF verification performed in step 7 was successful THEN TP passed ELSE TP failed ENDIF		



**Table A.118 — TP/AP-0DAT/OBU/BV/09 — Verify that the OBU supports the read by means of GET.rq of the *PaymentMeans* attribute**

<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a GET-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<pre>GET.rq = { fill = 0, eid = VST. DSRC- eid, accessCredentials = ∅, iid = ∅, attrIdList = { '32'D - - PaymentMeans } }</pre>	⇒
	2		<pre>GET.rs = { fill, eid, iid = ∅, attrList = { ('32'D, v) }, returnStatus }</pre>
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed	
	4	Verify length and allowed values of v (Table A.109 – Data Group Specification)	
	5	<pre>IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF</pre>	

**Table A.119 — TP/AP-0DAT/OBU/BV/10 — Verify that the OBU supports the read by means of GET-STAMPED.rq of the *Vehicle* data group attributes.**

<b>Detailed description</b>	Verify that the OBU supports the read (by means of GET-STAMPED.rq) of the <i>Vehicle</i> data group attributes, i. e.: <ul style="list-style-type: none"> <li>- <i>VehicleLicencePlateNumber</i>,</li> <li>- <i>VehicleClass</i>,</li> <li>- <i>VehicleDimensions</i>,</li> <li>- <i>VehicleAxles</i>,</li> <li>- <i>VehicleWeightLimits</i>,</li> <li>- <i>VehicleSpecificCharacteristics</i></li> </ul>		
<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a GET-STAMPED-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<pre> ACTION.rq = { mode = T, eid = VST. DSRC-eid,   actionType = 0, accessCredentials =   Ø,   GET-STAMPED.rq =     { attrIdList = {       '16'D - - LicencePlateNumber,       '17'D - - Class,       '18'D - - Dimensions,       '19'D - - Axles,       '20'D - - WeightLimits,       '22'D - -         SpecificCharacteristics },       nonce = C1, keyRef = C2 },       iid = Ø } </pre>	⇒
	2		<pre> ACTION.rs = { fill, eid, iid = Ø,   GET-STAMPED.rs = { attrList = {   ('16'D, v1), ('17'D, v2),   ('18'D, v3),   ('19'D, v4), ('20'D, v5),   ('22'D, v6) },   authenticator },   returnStatus } </pre>
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed	
	4	Verify length and allowed values of v <sub>1</sub> ÷ v <sub>6</sub> (Table A.109 – Data Group Specification) Verify authenticator	
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF	

**Table A.120 — TP/AP-0DAT/OBU/BV/11 — Verify that the OBU supports the read (by means of GET\_STAMPED.rq) of the *Equipment* data group attributes.**

<b>Detailed description</b>	<b>Verify that the OBU supports the read (by means of GET_STAMPED.rq) of the <i>Equipment</i> data group attributes, i. e.:</b> <ul style="list-style-type: none"> <li>- <i>EquipmentOBUID</i>,</li> <li>- <i>EquipmentStatus</i></li> </ul>		
<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a GET-STAMPED-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<b>ACTION.rq</b> = { mode = T, eid = VST. DSRC-eid, actionType = 0, accessCredentials = ∅, <b>GET-STAMPED.rq</b> = { attrIdList = { '24'D - - EquipmentOBUID, '26'D - - EquipmentStatus }, nonce = C1, keyRef = C2 }, iid = ∅ }	⇒
	2		<b>ACTION.rs</b> = { fill, eid, iid = ∅, <b>GET-STAMPED.rs</b> = { attrList = { ('24'D, v1), ('26'D, v2) }, authenticator }, returnStatus }
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed	
	4	Verify length and allowed values of v1 ÷ v2 (Table A.109 – Data Group Specification) Verify authenticator	
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF	



**Table A.121 — TP/AP-0DAT/OBU/BV/12 — Verify that the OBU supports the read by means of GET\_STAMPED.rq of the *Receipt* data group attributes.**

<b>Detailed description</b>	Verify that the OBU supports the read (by means of GET_STAMPED.rq) of the <i>Receipt</i> data group attributes, i. e.: - <i>ReceiptData1</i> , - <i>ReceiptData2</i>		
<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a GET-STAMPED-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<b>ACTION.rq</b> = { mode = T, eid = VST. DSRC-eid, actionType = 0, accessCredentials = ∅, <b>GET-STAMPED.rq</b> = { attrIdList = { '33'D - -ReceiptData1, '34'D - - ReceiptData2 }, nonce = C1, keyRef = C2 }, iid = ∅ }	⇒
	2		<b>ACTION.rs</b> = { fill, eid, iid = ∅, <b>GET-STAMPED.rs</b> = { attrList = { ('33'D, v1), ('34'D, v2)}, authenticator }, returnStatus }
	3	IF (returnStatus NOT OK) OR (response not received) THEN TP failed	
	4	Verify length and allowed values of v1 ÷ v2 (Table A.109 – Data Group Specification) Verify authenticator	
	5	IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF	

**Table A.122 — TP/AP-0DAT/OBU/BV/13 — Verify that the OBU supports the read by means of GET\_STAMPED.rq of the *PaymentMeans* attribute.**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a GET-STAMPED-request		
Stimulus and Expected Behaviour	Tester		IUT
	<b>ACTION.rq</b> = { mode = T, eid = VST. DSRC-eid, actionType = 0, accessCredentials = ∅, 1 <b>GET-STAMPED.rq</b> = { attrIdList = { '32'D - -PaymentMeans }, nonce = C1, keyRef = C2 }, iid = ∅ }	⇒	
	2	⇐	<b>ACTION.rs</b> = { fill, eid, iid = ∅, <b>GET-STAMPED.rs</b> = { attrList = { ('32'D, v) }, authenticator }, returnStatus }
	3		IF (returnStatus NOT OK) OR (response not received) THEN TP failed
	4		Verify length and allowed values of v (Table A.109 – Data Group Specification) Verify authenticator
	5		IF verification performed in step 4 was successful THEN TP passed ELSE TP failed ENDIF

**Table A.123 — TP/AP-0DAT/OBU/BV/14 — Verify that the OBU supports the update of the *EquipmentStatus* attribute**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a GET-request and SET-request		
Stimulus and Expected Behaviour	Tester		IUT
	1 <code>GET.rq = { fill = 0, eid = VST. DSRC-eid,     accessCredentials = Ø, iid = Ø,     attrIdList = { '26'D - - EquipmentStatus } }</code>	⇒	
	2		<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('26'D, v) }, returnStatus }</code>
	3 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4 The tester notes the value (A) of the last 12 bits of the attribute v received in the GET-response and calculate B = A + 1		
	5 <code>SET.rq = { fill = 0, mode = T,     eid = VST. DSRC-eid,     accessCredentials = Ø,     attrList = { ( '26'D, B ) }, iid = Ø }</code>	⇒	
	6		<code>SET.rs={fill, eid, iid = Ø, returnStatus}</code>
	7 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	8 <code>GET.rq = { fill = 0, eid = VST. DSRC-eid,     accessCredentials = Ø, iid = Ø,     attrIdList = { '26'D - - EquipmentStatus } }</code>	⇒	
	9		<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('26'D, v) }, returnStatus }</code>
	10 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	11 The tester notes the value (C) of the last 12 bits of the attribute v received in the GET-response. IF C = B THEN TP passed ELSE TP failed ENDIF		

**Table A.124 — TP/AP-0DAT/OBU/BV/15 — Verify that the OBU supports the update of the Receipt data group attributes**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a GET-request and SET-request		
Stimulus and Expected Behaviour	Tester		IUT
	1 <code>GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '33'D - - ReceiptData1, '34'D - - ReceiptData2} }</code>	⇒	
	2		<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('33'D, A), ( '34'D, B)}, returnStatus }</code>
	3 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	4 The tester notes the values (A and B) of the attributes received in the GET-response and calculate the correct values C ≠ A and D ≠ B		
	5 <code>SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = Ø, attrList = { ( '33'D, C ), ( '34'D, D )}, iid = Ø }</code>	⇒	
	6	⇐	<code>SET.rs={fill, eid, iid = Ø, returnStatus}</code>
	7 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	8 <code>GET.rq = { fill = 0, eid = VST. DSRC-eid, accessCredentials = Ø, iid = Ø, attrIdList = { '33'D - - ReceiptData1, '34'D - - ReceiptData2} }</code>	⇒	
	9	⇐	<code>GET.rs = { fill, eid, iid = Ø, attrList = { ('33'D, E), ( '34'D, F)}, returnStatus }</code>
	10 IF (returnStatus NOT OK) OR (response not received) THEN TP failed		
	11 The tester notes the values (E and F) of the attributes received in the GET-response. IF E = C AND F = D THEN TP passed ELSE TP failed ENDIF		



#### A.5.6.4 BI test purposes

Table A.125 to Table A.129 specify the application data attributes BI test purposes for OBE with security level 0.

Test subgroup objective:

- a) to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool, in case of:
    - 1) update of the read-only attributes:
      - i) Vehicle;
      - ii) PaymentMeans;
      - iii) EquipmentOBUID.
    - 2) update of the read-write attributes:
      - i) EquipmentStatus;
      - ii) ReceiptData1;
      - iii) ReceiptData2;
- with:
- iv) wrong length.

**Table A.125 — TP/AP-0DAT/OBU/BI/01 — Verify that the OBU prevents the update of the read-only *Vehicle* data group attributes, one at the time**

TP Origin	Specific		
Reference	EN 15509:2023, 6.1.4		
Initial condition	OBU initialised and ready to accept a SET-request		
	Tester		IUT
1	SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = Ø, attrList = { ( '16'D, x <sub>1</sub> ) }, iid = Ø }	⇒	
2		⇐	SET.rs = { fill, eid, iid = Ø, returnStatus }
3	IF (returnStatus OK) THEN TP failed		
4	SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = Ø, attrList = { ( '16'D, x <sub>2</sub> ) }, iid = Ø }	⇒	
5		⇐	SET.rs = { fill, eid, iid = Ø, returnStatus }
6	IF (returnStatus OK) THEN TP failed		

Stimulus and Expected Behaviour	7	<b>SET.rq</b> = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = $\emptyset$ , attrList = { ( '16'D, x <sub>3</sub> ) }, iid = $\emptyset$ }	$\Rightarrow$	
	8		$\Leftarrow$	<b>SET.rs</b> = { fill, eid, iid = $\emptyset$ , returnStatus }
	9	IF (returnStatus OK) THEN TP failed		
	10	<b>SET.rq</b> = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = $\emptyset$ , attrList = { ( '16'D, x <sub>4</sub> ) }, iid = $\emptyset$ }	$\Rightarrow$	
	11		$\Leftarrow$	<b>SET.rs</b> = { fill, eid, iid = $\emptyset$ , returnStatus }
	12	IF (returnStatus OK) THEN TP failed		
	13	<b>SET.rq</b> = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = $\emptyset$ , attrList = { ( '16'D, x <sub>5</sub> ) }, iid = $\emptyset$ }	$\Rightarrow$	
	14		$\Leftarrow$	<b>SET.rs</b> = { fill, eid, iid = $\emptyset$ , returnStatus }
	15	IF (returnStatus OK) THEN TP failed		
	16	<b>SET.rq</b> = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = $\emptyset$ , attrList = { ( '16'D, x <sub>6</sub> ) }, iid = $\emptyset$ }	$\Rightarrow$	
	17		$\Leftarrow$	<b>SET.rs</b> = { fill, eid, iid = $\emptyset$ , returnStatus }
	18	IF (returnStatus OK) THEN TP failed		

**Table A.126 — TP/AP-0DAT/OBU/BI/02 — Verify that the OBU prevents the update of the read-only *Vehicle* attributes list**

TP Origin	Specific			
Reference	EN 15509:2023, 6.1.4			
Initial condition	OBU initialised and ready to accept a SET-request			
Stimulus and Expected Behaviour		Tester		IUT
	1	SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = ∅, attrList = { ( '16'D, x1 ), ( '17'D, x2 ), ( '18'D, x3 ), ( '19'D, x4 ), ( '20'D, x5 ), ( '22'D, x6 ) }, iid = ∅ }	⇒	
	2		⇐	SET.rs = { fill, eid, iid = ∅, returnStatus }
	3	IF (returnStatus OK) THEN TP failed		

**Table A.127 — TP/AP-0DAT/OBU/BI/03 — Verify that the OBU prevents the update of the read-only *PaymentMeans* attribute**

<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a SET-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<code>SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = ∅, attrList = { ( '32'D, x ) }, iid = ∅ }</code>	$\Rightarrow$
	2		$\Leftarrow$ <code>SET.rs = { fill, eid, iid = ∅, returnStatus }</code>
	3	IF (returnStatus OK) THEN TP failed	

**Table A.128 — TP/AP-0DAT/OBU/BI/04 — Verify that the OBU prevents the update of the read-only *EquipmentOBUID* attribute**

<b>TP Origin</b>	Specific		
<b>Reference</b>	EN 15509:2023, 6.1.4		
<b>Initial condition</b>	OBU initialised and ready to accept a SET-request		
<b>Stimulus and Expected Behaviour</b>		<b>Tester</b>	<b>IUT</b>
	1	<code>SET.rq = { fill = 0, mode = T, eid = VST. DSRC-eid, accessCredentials = ∅, attrList = { ( '24'D, x ) }, iid = ∅ }</code>	$\Rightarrow$
	2		$\Leftarrow$ <code>SET.rs = { fill, eid, iid = ∅, returnStatus }</code>
	3	IF (returnStatus OK) THEN TP failed	

**Table A.129 — TP/AP-0DAT/OBU/BI/05 — Verify that the OBU prevents the update of the Equipment attributes list by requesting setting a value for that element together with setting a value for a R/W element**

## A.5.7 Application security test purposes, security level 0 (AP-0SEC)

### A.5.7.1 General information

The Test Purposes specified in Table 130 to Table 138 are applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for OBU, C.4.4, Table C.3.

### A.5.7.2 BV test purposes

Table A.130 to Table A.137 specify the application security BV test purposes for OBE with security level 0.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

The following Test Purposes are specified in EN ISO 14907-2:2021 and use five different values of the couple {RndRSE, KeyRef}.

**Table A.130 — TP/AP-0SEC/OBU/BV/01 — Authentication keys 1÷8 and Authenticator for RndRSE value =r1 and KeyRef value =k1**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.131 — TP/AP-0SEC/OBU/BV/02 — Authentication keys 1÷8 and Authenticator for RndRSE value =r2 and KeyRef value =k2**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.132 — TP/AP-0SEC/OBU/BV/03 — Authentication keys 1÷8 and Authenticator for RndRSE value =r3 and KeyRef value =k3**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.133 — TP/AP-0SEC/OBU/BV/04 — Authentication keys 1÷8 and Authenticator for RndRSE value =r4 and KeyRef value =k4**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.



**Table A.134 — TP/AP-0SEC/OBU/BV/05 — Authentication keys 1÷8 and Authenticator for RndRSE value =r5 and KeyRef value =k5**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.135 — TP/AP-0SEC/OBU/BV/06 — Authentication keys 1÷8 and Authenticator for RndRSE value =r6 and KeyRef value =k6**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.136 — TP/AP-0SEC/OBU/BV/07 — Authentication keys 1÷8 and Authenticator for RndRSE value =r7 and KeyRef value =k7**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

**Table A.137 — TP/AP-0SEC/OBU/BV/08 — Authentication keys 1÷8 and Authenticator for RndRSE value =r8 and KeyRef value =k8**

<b>TP Origin</b>	Identical to TC10-A in EN ISO 14907-2:2021, C.3.1.1.
<b>Reference</b>	EN 15509:2023, 6.1.5
<b>Initial condition</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC10-A in EN ISO 14907-2:2021, C.3.1.1.

NOTE The support of the Transaction Counter correct update is tested by means of TP/AP-0DAT/OBU/BV/14.

### A.5.7.3 BI test purposes

NOTE Prevention of usage of KeyRef not allowed values is tested by means of EN ISO 14907-2:2021, TC10-A.

## A.5.8 Application transaction test purposes, security level 0 (AP-0TRA)

### A.5.8.1 General

The Test Purpose specified in Table A.138 is applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for OBU, C.4.4, Table C.3.

**A.5.8.2 BV test purposes**

Table A.138 specifies the application transaction BV test purpose for OBE with security level 0.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct transactions of the test system.

**Table A.138 — TP/AP-0TRA/OBU/BV/01 — Support of CARDME transaction**

<b>TP Origin</b>	Derived from TC30-A in EN ISO 14907-2:2021, C4.1.
<b>Reference</b>	EN 15509:2023, 6.1.6
<b>Initial condition</b>	In accordance with TC30-A in EN ISO 14907-2:2021, C.4.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with TC30-A in EN ISO 14907-2:2021, C.4.1 without AccessCredentials.

**A.5.8.3 BI test purposes**

Not applicable.

**A.5.9 Application I-kernel test purposes, security level 1 (AP-1BAS)****A.5.9.1 General**

The Test Purposes specified in Table A.139 and Table A.140 are applicable to the security level 1 claimed in EN 15509:2023 ICS proforma for OBU, B.4.3, Table B.3.

**A.5.9.2 BV test purposes**

Table A.139 specifies the application I-kernel BV test purposes for OBE with security level 1.

Test subgroup objective:

- a) to test the behaviour of the IUT in relation to:
  - 1) valid BST;
  - 2) valid EVENT-REPORT-Rq (Release);
- b) to test the IUT support of:
  - 1) BeaconId;
  - 2) Time;
  - 3) Profile;
  - 4) Applications;
  - 5) LID.

**Table A.139 — application I-kernel BV test purposes for security level 1**

TP/AP-1BAS/OBU/BV/01	≡ TP/AP-0BAS/OBU/BV/01
TP/AP-1BAS/OBU/BV/02	≡ TP/AP-0BAS/OBU/BV/02
TP/AP-1BAS/OBU/BV/03	≡ TP/AP-0BAS/OBU/BV/03
TP/AP-1BAS/OBU/BV/04	≡ TP/AP-0BAS/OBU/BV/04
TP/AP-1BAS/OBU/BV/05	Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008
TP/AP-1BAS/OBU/BV/06	Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008
TP/AP-1BAS/OBU/BV/07	Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008
TP/AP-1BAS/OBU/BV/08	Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008
TP/AP-1BAS/OBU/BV/09	≡ TP/AP-0BAS/OBU/BV/09
TP/AP-1BAS/OBU/BV/10	≡ TP/AP-0BAS/OBU/BV/10 Apply the following change: 1. Table A.56 — VST, General Structure → Table A.57 — VST, General Structure for security level 1

**A.5.9.3 BI test purposes**

Table A.140 specifies the application I-kernel BI test purposes for OBE with security level 1.

Test subgroup objective:

— to test the behaviour of the IUT in relation to invalid BST.

**Table A.140 — application I-kernel BI test purposes for security level 1**

TP/AP-1BAS/OBU/BI/01	≡ TP/AP-0BAS/OBU/BI/01
TP/AP-1BAS/OBU/BI/02	≡ TP/AP-0BAS/OBU/BI/02

**A.5.10 Application T-kernel test purposes, security level 1 (AP-1FUN)****A.5.10.1 General**

The Test Purposes specified in Table A.141 and Table A.142 are applicable to the security level 1 claimed in EN 15509:2023 ICS proforma for OBU, C.4.4, Table C.3.

**A.5.10.2 BV test purposes**

Table A.141 specifies the application T-kernel BV test purposes for OBE with security level 1.



Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.141 — application T-kernel BV test purposes for security level 1**

<b>TP/AP-1FUN/OBU/BV/01</b>	<b>≡ TP/AP-0FUN/OBU/BV/01</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/02</b>	<b>≡ TP/AP-0FUN/OBU/BV/02</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/03</b>	<b>≡ TP/AP-0FUN/OBU/BV/03</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/04</b>	<b>≡ TP/AP-0FUN/OBU/BV/04</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/05</b>	<b>≡ TP/AP-0FUN/OBU/BV/05</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/06</b>	<b>≡ TP/AP-0FUN/OBU/BV/06</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/07</b>	NOTE This empty test case is kept in the document in order to keep the numbering consistent with the first edition of this standard.
<b>TP/AP-1FUN/OBU/BV/08</b>	<b>≡ TP/AP-0FUN/OBU/BV/08</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/09</b>	<b>≡ TP/AP-0FUN/OBU/BV/09</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/10</b>	<b>≡ TP/AP-0FUN/OBU/BV/10</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/11</b>	<b>≡ TP/AP-0FUN/OBU/BV/11</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/12</b>	<b>≡ TP/AP-0FUN/OBU/BV/12</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BV/13</b>	<b>≡ TP/AP-0FUN/OBU/BV/13</b> Apply the following changes: 1. accessCredentials = $\emptyset$ → accessCredentials = calculated value



<b>TP/AP-1FUN/ObU/BV/14</b>	<b>≡ TP/AP-0FUN/ObU/BV/14</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/15</b>	<b>Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008</b>
<b>TP/AP-1FUN/ObU/BV/16</b>	<b>≡ TP/AP-0FUN/ObU/BV/16</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/17</b>	<b>≡ TP/AP-0FUN/ObU/BV/17</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/18</b>	<b>≡ TP/AP-0FUN/ObU/BV/18</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/19</b>	<b>≡ TP/AP-0FUN/ObU/BV/19</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/20</b>	<b>≡ TP/AP-0FUN/ObU/BV/20</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/ObU/BV/21</b>	<b>≡ TP/AP-0FUN/ObU/BV/21</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value

#### A.5.10.3 BI test purposes

Table A.142 specifies the application T-kernel BI test purposes for OBE with security level 1.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table A.142 — application T-kernel BI test purposes for security level 1**

<b>TP/AP-1FUN/OBU/BI/01</b>	<b>≡ TP/AP-0FUN/OBU/BI/01</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BI/02</b>	<b>≡ TP/AP-0FUN/OBU/BI/02</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BI/03</b>	<b>≡ TP/AP-0FUN/OBU/BI/03</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BI/04</b>	<b>≡ TP/AP-0FUN/OBU/BI/04</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1FUN/OBU/BI/05</b>	<b>Empty Test Purpose, left to keep numbering aligned with ETSI/TS 102 486-2-2:2008</b>
<b>TP/AP-1FUN/OBU/BI/06</b>	<b>≡ TP/AP-0FUN/OBU/BI/06</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value

### **A.5.11 Application data attributes test purposes, security level 1 (AP-1DAT)**

#### **A.5.11.1 General**

The Test Purposes specified in Table A.143 and Table A.144 are applicable to the security level 1 claimed in EN 15509:2023 ICS proforma for OBU, B.4.3, Table B.3.

#### **A.5.11.2 BV test purposes**

Table A.143 specifies the application data attributes BV test purposes for OBE with security level 1.

Test subgroup objective:

- a) to test the behaviour of the IUT in relation to the support of mandatory attributes within the allowed length and value range:

- 1) Payment;
- 2) Vehicle;
- 3) Equipment;
- 4) Receipt;
- 5) Contract

by means of the syntactically and contextual correct PDUs:

- 6) GET;
- 7) GET\_STAMPED;
- 8) SET.

**Table A.143 — Application data attributes BV test purposes for security level 1**

<b>TP/AP-1DAT/OBU/BV/01</b>	<b>≡ TP/AP-0DAT/OBU/BV/01</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/02</b>	<b>≡ TP/AP-0DAT/OBU/BV/02</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/03</b>	<b>≡ TP/AP-0DAT/OBU/BV/03</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/04</b>	<b>≡ TP/AP-0DAT/OBU/BV/04</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/05</b>	<b>≡ TP/AP-0DAT/OBU/BV/05</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/06</b>	<b>≡ TP/AP-0DAT/OBU/BV/06</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/07</b>	<b>≡ TP/AP-0DAT/OBU/BV/07</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/08</b>	<b>≡ TP/AP-0DAT/OBU/BV/08</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/09</b>	<b>≡ TP/AP-0DAT/OBU/BV/09</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/10</b>	<b>≡ TP/AP-0DAT/OBU/BV/10</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/11</b>	<b>≡ TP/AP-0DAT/OBU/BV/11</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/12</b>	<b>≡ TP/AP-0DAT/OBU/BV/12</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/13</b>	<b>≡ TP/AP-0DAT/OBU/BV/13</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BV/14</b>	<b>≡ TP/AP-0DAT/OBU/BV/14</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value

<b>TP/AP-1DAT/OBU/BV/15</b>	<b>≡ TP/AP-0DAT/OBU/BV/15</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
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### A.5.11.3 BI test purposes

Table A.144 specifies the application data attributes BI test purposes for OBE with security level 1.

Test subgroup objective:

- a) to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool, in case of:
    - 1) update of the *read-only* attributes:
      - i) Vehicle;
      - ii) PaymentMeans;
      - iii) EquipmentOBUID.
    - 2) update of the *read-write* attributes:
      - i) EquipmentStatus;
      - ii) ReceptitData1;
      - iii) ReceiptData2;
- with:
- iv) wrong length.

**Table A.144 — Application data attributes BI test purposes for security level 1**

<b>TP/AP-1DAT/OBU/BI/01</b>	<b>≡ TP/AP-0DAT/OBU/BI/01</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BI/02</b>	<b>≡ TP/AP-0DAT/OBU/BI/02</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BI/03</b>	<b>≡ TP/AP-0DAT/OBU/BI/03</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BI/04</b>	<b>≡ TP/AP-0DAT/OBU/BI/04</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value
<b>TP/AP-1DAT/OBU/BI/05</b>	<b>≡ TP/AP-0DAT/OBU/BI/05</b> Apply the following changes: 1. accessCredentials = ∅ → accessCredentials = calculated value



## A.5.12 Application security test purposes, security level 1 (AP-1SEC)

### A.5.12.1 General

The Test Purposes specified in Table A.145 is applicable to the security level 1 claimed in EN 15509:2023 ICS proforma for OBU, C.4.4, Table C.3.

### A.5.12.2 BV test purposes

Table A.145 specifies the security BV test purposes for OBE with security level 1.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table A.145 — Application security test BV purposes for security level 1**

TP/AP-1SEC/OBU/BV/01	≡ TP/AP-0SEC/OBU/BV/01
TP/AP-1SEC/OBU/BV/02	≡ TP/AP-0SEC/OBU/BV/02
TP/AP-1SEC/OBU/BV/03	≡ TP/AP-0SEC/OBU/BV/03
TP/AP-1SEC/OBU/BV/04	≡ TP/AP-0SEC/OBU/BV/04
TP/AP-1SEC/OBU/BV/05	≡ TP/AP-0SEC/OBU/BV/05
TP/AP-1SEC/OBU/BV/06	≡ TP/AP-0SEC/OBU/BV/06
TP/AP-1SEC/OBU/BV/07	≡ TP/AP-0SEC/OBU/BV/07
TP/AP-1SEC/OBU/BV/08	≡ TP/AP-0SEC/OBU/BV/08

NOTE The support of the Transaction Counter correct update is tested by means of TP/AP-1DAT/OBU/BV/14.

### A.5.12.3 BI test purposes

NOTE Prevention of usage of KeyRef not allowed values is tested by means of EN ISO 14907-2:2021, TC10-A.

## A.5.13 Application transaction test purposes, security level 1 (AP-1TRA)

### A.5.13.1 General

The Test Purposes specified in Table A.146 is applicable to the security level 1 claimed in EN 15509:2023 ICS proforma for OBU, B.4.3, Table B.3.

### A.5.13.2 BV test purposes

Table A.146 specifies the transaction BV test purpose for OBE with security level 1.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

Table A.146 — TP/AP- 1TRA/OBU/BV/01 — Support of CARDME transactionTP Origin	Derived from TC30-A in EN ISO 14907-2:2021.
Reference	EN 15509:2023, 6.1.4
Initial condition	
Stimulus and Expected Behaviour	In accordance with TC30-A in EN ISO 14907-2:2021, C.4 with AccessCredentials.

A.5.13.3 BI test purposes

Not applicable.

## Annex B (normative)

### Test purposes for roadside equipment

#### B.1 General

This annex specifies the Test Purposes (TP) for the conformity evaluation of RSE to EN 15509:2023.

RSE and RSU have been used as terms with the same or similar meaning in the standardization of DSRC and DSRC-based EFC within CEN and ETSI. Previously developed relevant standards used the term RSU with the meaning RSE as specified in this document. When referring to relevant tests in other documents, this document uses the terms of the referenced source, which explains why the term RSU is often used in this Annex.

#### B.2 Physical layer

##### B.2.1 BV test purposes

Table B.1 to Table B.12 specify the application physical layer BV test purposes for RSE.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table B.1 — TP/PHY/RSE/BV/01 — Modulation index**

<b>TP Origin</b>	Identical to ETSI TS 104 022:2024, Clause 8.1.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI TS 104 022:2024, Clause 8.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI TS 104 022:2024, Clause 8.1 and Clause 7.1.1.

**Table B.2 — TP/PHY/RSE/BV/02 — Dynamic range – sensitivity**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.3
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.3.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.3 and Clause 4.4.3.3.1.2

**Table B.3 — TP/PHY/RSE/BV/03 — Dynamic range – error behaviour at high wanted input signals**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.3
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.3.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.3 and Clause 4.4.3.3.2.2

**Table B.4 — TP/PHY/RSE/BV/04 — Intermodulation immunity**

<b>TP Origin</b>	Identical to ETSI TS 104 022:2024, Clause 8.2.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI TS 104 022:2024, Clause 8.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI TS 104 022:2024, Clause 8.2 and Clause 7.1.2.

**Table B.5 — TP/PHY/RSE/BV/05 — Co-channel rejection**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.4
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.4.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.4 and Clause 4.4.3.2.3.2

**Table B.6 — TP/PHY/RSE/BV/06 — Blocking**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.2
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.2 and Clause 4.4.3.2.1.2

**Table B.7 — TP/PHY/RSE/BV/07 — Selectivity**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.3
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2004, Clause 5.2.2.2.3.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.2.3 and Clause 4.4.3.2.2.2

**Table B.8 — TP/PHY/RSE/BV/08 — Maximum equivalent isotropic radiated power**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.1.1
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.1 and Clause 4.4.2.1.2

**Table B.9 — TP/PHY/RSE/BV/09 — Frequency error**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.1.2
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.2.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.2 and Clause 4.4.2.2.2



**Table B.10 — TP/PHY/RSE/BV/10 — Transmitter spectrum mask**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.1.3
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.3.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.3 and Clause 4.4.2.3.2

**Table B.11 — TP/PHY/RSE/BV/11 — Transmitter unwanted emissions**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.1.4
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.4.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.1.4 and Clause 4.4.2.4.2

**Table B.12 — TP/PHY/RSE/BV/12 — Receiver spurious emissions**

<b>TP Origin</b>	Identical to ETSI EN 300 674-2-1:2022, Clause 5.2.2.1
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.1.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI EN 300 674-2-1:2022, Clause 5.2.2.1 and Clause 4.4.3.1.2.

## B.2.2 BI test purposes

BI test purposes group do not apply for Layer 1.

## B.3 MAC Sublayer

### B.3.1 BV test purposes

Table B.13 to Table B.20 specify the MAC sublayer BV test purposes for RSE.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.

**Table B.13 — TP/MAC/RSE/BV/01 — Receive uplink frames of maximum length in private windows specified by N3**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/01.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/01.

**Table B.14 — TP/MAC/RSE/BV/02 — Timing constraint T1 implemented**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/02.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/02.

**Table B.15 — TP/MAC/RSE/BV/03 — Correct private medium response time N12 for re-allocation of private windows implemented**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/03.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/03.

**Table B.16 — TP/MAC/RSE/BV/04 — Correct S-bit mechanism for re-allocations of private windows and correct initialization of S-bit**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/04.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/04.

**Table B.17 — TP/MAC/RSE/BV/05 — Detect and manage unusual but possible value of the C/R-bit in the MAC control field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/05.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/05.

**Table B.18 — TP/MAC/RSE/BV/06 — Receive in the first public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/06.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/06.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/06.

**Table B.19 — TP/MAC/RSE/BV/07 — Receive in the second public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/07.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/07.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/07.

**Table B.20 — TP/MAC/RSE/BV/08 — Receive in the third public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/08.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/08.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BV/08.

### B.3.2 BI test purposes

Table B.21 to Table B.41 specify the MAC sublayer BI test purposes for RSE.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.

**Table B.21 — TP/MAC/RSE/BI/01 — Detect and manage double-bit errors in the information field of the LPDU of the uplink frame using the FCS field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/01.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/01.

**Table B.22 — TP/MAC/RSE/BI/02 — Detect and manage double-bit errors in the FCS field of the LPDU of the uplink frame using the FCS field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/02.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/02.



**Table B.23 — TP/MAC/RSE/BI/03 — Detect and manage block of 15 bits errors in the uplink frame using the FCS field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/03.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/03.

**Table B.24 — TP/MAC/RSE/BI/04 — Detect and manage the abort sequence in the LPDU field of an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/04.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/04.

**Table B.25 — TP/MAC/RSE/BI/05 — Detect and manage the abort sequence at the end of an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/05.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/05.

**Table B.26 — TP/MAC/RSE/BI/06 — Detect and manage a too long frame in the uplink window in accordance with N3**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/06.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/06.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/06.

**Table B.27 — TP/MAC/RSE/BI/07 — Detect and manage a wrong LID in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/07.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/07.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/07.



**Table B.28 — TP/MAC/RSE/BI/08 — Detect and manage wrong format of private LID in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/08.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/08.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/08.

**Table B.29 — TP/MAC/RSE/BI/09 — Detect and manage broadcast LID when expecting private LID in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/09.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/09.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/09.

**Table B.30 — TP/MAC/RSE/BI/10 — Detect and manage multicast LID when expecting private LID in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/10.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/10.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/10.

**Table B.31 — TP/MAC/RSE/BI/11 — Detect and manage missing MAC control field in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/11.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/11.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/11.

**Table B.32 — TP/MAC/RSE/BI/12 — Detect and manage wrong D-bit in the MAC control field in a frame in a public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/12.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/12.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/12.

**Table B.33 — TP/MAC/RSE/BI/13 — Detect and manage wrong D-bit in the MAC control field in a frame in a private uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/13.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/13.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/13.

**Table B.34 — TP/MAC/RSE/BI/14 — Detect and manage wrong L-bit in the MAC control field in a frame in a public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/14.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/14.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/14.

**Table B.35 — TP/MAC/RSE/BI/15 — Detect and manage wrong L-bit in the MAC control field in a frame in a private uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/15.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/15.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/15.

**Table B.36 — TP/MAC/RSE/BI/16 — Detect and manage wrong MAC control field in a frame in a public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/16.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/16.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/16.

**Table B.37 — TP/MAC/RSE/BI/17 — Detect and manage blocked signals in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/17.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/17.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/17.

**Table B.38 — TP/MAC/RSE/BI/18 — Detect and manage blocked end flag in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/18.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/18.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/18.

**Table B.39 — TP/MAC/RSE/BI/19 — Detect and manage blocked start flag in an uplink frame**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/19.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/19.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/19.

**Table B.40 — TP/MAC/RSE/BI/20 — Detect and manage wrong R-bit in the MAC control field in a frame in a public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/20.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/20.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/20.

**Table B.41 — TP/MAC/RSE/BI/21 — Detect and manage an illegal number of octets (>N4) in a frame in a public uplink window**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/21.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/21.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/MAC/RSU/BI/21.

## B.4 LLC Sublayer

### B.4.1 BV test purposes

Table B.42 to Table B.46 specify the LLC sublayer BV test purposes for RSE.

Test subgroup objective:

- to test the behaviour of the IUT in relation to syntactically and contextual correct behaviour of the test system.



**Table B.42 — TP/LLC/RSE/BV/01 — Exchange UI commands**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/01.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/01.

**Table B.43 — TP/LLC/RSE/BV/02 — Manage ACn commands with correct n-value initialization and n-value sequence**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/02.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/02.

**Table B.44 — TP/LLC/RSE/BV/03 — Correctly manage retransmission of ACn command**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/03.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/03.

**Table B.45 — TP/LLC/RSE/BV/04 — Correctly manage multiple link communications**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/04.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/04.

**Table B.46 — TP/LLC/RSE/BV/05 — Manage late response Procedure I**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/05.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BV/05.

## B.4.2 BI test purposes

Table B.47 to Table B.51 specify the LLC sublayer BI test purposes for RSE.

Test subgroup objective:

- to check the behaviour of the IUT in response to invalid stimuli and behaviour from the test tool.



**Table B.47 — TP/LLC/RSE/BI/01 — Correctly manage corrupted LLC control fields**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/01.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/01.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/01.

**Table B.48 — TP/LLC/RSE/BI/02 — Detect and manage invalid ACn LPDU containing a fractional number of octets in length**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/02.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/02.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/02.

**Table B.49 — TP/LLC/RSE/BI/03 — Detect and manage an ACn response not containing a valid response control field**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/03.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/03.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/03.

**Table B.50 — TP/LLC/RSE/BI/04 — Detect and manage an ACn response control field with a corrupted ACn response status subfield**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/04.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/04.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/04.

**Table B.51 — TP/LLC/RSE/BI/05 — Correctly manage an ACn response with invalid sequence number n**

<b>TP Origin</b>	Identical to ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/05.
<b>Reference</b>	EN 15509:2023, 6.2.2
<b>Initial condition</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/05.
<b>Stimulus and Expected Behaviour</b>	In accordance with ETSI/TS 102 486-1-2:2008 TP/LLC/RSU/BI/05.

## B.5 Application Layer Test Purposes

### B.5.1 General

For the application layer test purposes, a special notation and symbol convention is used, as specified in what follows.

Table B.52 specifies how symbols are used in the description of the TPs .

**Table B.52 Symbols used in TP Descriptions**

SYMBOL	DESCRIPTION
XXX.rq $\Rightarrow$	The IUT sends the XXX.rq PDU to the Tester
$\Leftarrow$ YYY.rs	The tester sends the YYY.rs PDU to the IUT
$A \equiv B$	Test Purpose A “is congruent to” Test Purpose B. The notation Test Purpose A $\equiv$ Test Purpose B means that the Test Purpose A is the same as Test Purpose B. If differences in parameters or parameter values are to be applied, they are indicated in the text immediately below
$A \rightarrow B$	Object A “is transformed” into Object B. So a notation like “Table X $\rightarrow$ Table Y” means that, for the scope of the Test Purpose, any reference of Table X should be changed into references to Table Y.
=	Means “assignment”. That is, a notation like “accessCredentials = a value” means that the field accessCredentials is given a value.
$\emptyset$	Means “empty” or “not set”. So, a notation like “accessCredentials = $\emptyset \rightarrow$ accessCredentials = calculated value”, for a given Test Purpose, means “change all occurrences in which the field accessCredentials has not been assigned to calculation of the value accessCredentials to a given value.”

**NOTE** The sequence of PDUs issued by an RSE is not constrained by EN 15509:2023. In general this means that PDUs cannot be forced to be generated by the IUT.

To adequately cover all possible test purposes and to avoid a combinatorial explosion, an abbreviated notation is used in this document. Following this notation, if applicable in a test purpose, a step is indicated as:

n	<b>Perform TP as specified in Table B.53 — PDU Selector for security level 0</b>
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This means that, based on the received PDU, a corresponding test purpose shall be executed, as specified in Table B.53 — PDU Selector for security level 0:

**Table B.53 — PDU Selector for security level 0**

n	On arriving	GET.rq	Execute	TP/AP-0GET/RSE/...	...BI/x or ...BV /y
		SET.rq		TP/AP-0SET/RSE/...	
		ACTION.rq (GET-STAMPED.rq)		TP/AP-0STA/RSE/...	
		ACTION.rq (SET-MMI.rq)		TP/AP-0MMI/RSE/...	
		ACTION.rq (ECHO.rq)		TP/AP-0ECH/RSE/...	
		EVENT-REPORT.rq		TP/AP-0REL/RSE/...	
	Any other PDU		TP failed		

In order for the Test Purposes to clearly identify and specify the subject of the test, and because of the fact that most Application Protocol Data Unit exchanges can only be tested after other exchanges had been previously successfully performed, the Tester has been modelled as controlling a variable, named **Error**, which indicates if a previously executed Test Purpose had failed. This allows to properly control the sequence of events in a Test Purpose. The variable Error is set by the Tester to either T (True) or F (False), to indicate whether an error occurred or not.

Additionally, as most Application Protocol Data Unit carry the **mode** parameter, which indicates whether a response is expected or not, this mode parameter can be used in a Test Purpose by the Tester to decide

whether to issue a response or not in the case the Test Purpose passes, so to enable the IUT to continue issuing requests in subsequent Test Purposes.

## **B.5.2 Application initialization phase test purposes, security level 0 (AP-0BAS)**

### **B.5.2.1 General**

The Test Purposes specified in Table B.55 and Table B.56 are applicable to the security level 0 claimed in EN 15509:2023 ICS proforma for RSE, B.5.4, Table C.27/1.

For the purpose of this conformance test, the VST specified in:

— Table B.54 — VST1 - valid VST for security level 0

shall be transmitted to the IUT.

Table B.54 — VST1- valid VST for security level 0

					Length	Values		
fill					4 bits	Any		
profile					1 bit (Profile ext.)	0 ( = no extension)		
					7 bits	In accordance with the Profile specified in EN 12834:2003, Annex A.		
applications					1 bit (applications ext.)	0 ( = no extension)		
					7 bits (number of applic.)	2		
	EFC Application				1 bit (eid opt.)	1 ( = eid present)		
					1 bit (parameter opt.)	1 ( = parameter present)		
		aid			1 bit (aid ext.)	0 ( = no extension)		
					5 bits	1 ( = electronic-fee-collection)		
		eid			1 bit (eid ext.)	0 ( = no extension)		
					7 bits	any ( ≠ other eid used in this VST)		
		parameter				1 bit (Container ext.)	0 ( = no extension)	
						7 bits (Container CHOICE)	2 ( = OCTET STRING)	
						1 bit (octet string ext.)	0 ( = no extension)	
						7 bits (octet string length)	6	
			EFC-ContextMark	Contract Provider			10 bits (CountryCode)	In accordance with EN ISO 3166-1:2020
							14 bits (IssuerIdentifier)	In accordance with EN ISO 14816:2019
				typeOf Contract			16 bits	Any
					context Version			1 bit (contextVersion ext.)
						7 bits	Any	
	Application 2				1 bit (eid opt.)	1 ( = eid present)		
					1 bit (parameter opt.)	0 ( = parameter not present)		
		aid			1 bit (aid ext.)	0 ( = no extension)		
					5 bits	≠ 1		
		eid			1 bit (eid ext.)	0 ( = no extension)		
					7 bits	any ( ≠ other eid used in this VST)		
obeConfiguration					1 bit (obeStatus opt.)	1 ( = obeStatus present)		
	equipmentClass				15 bits	Any		
	manufacturerID				16 bits	Any		
	obeStatus				16 bits	Any		



**Tæ2æ Tb leAl . P/. - AeA**

- Spæ i fEE Nlc500N:2c Ø0Øæ S:Ø3 12SN i . :cN 14016N 90BUh t 02 N5400a æl ces f
- cN Næpd0641 6prc5:0 cy
- :6 :cN :2c pc2Sl 064069:2c æG- Ø ØæS:Ø3 :6 l SæT . U- f

**DOBUæ Tæ5 DV3r V·0Tr f3yfE3Tb301 be/thu luOl lue pD AP. . - /lAlue TfD**

DV d /tntn	U1c5005		
yeh/enGe	nq uEEs 7y8s 8AMP8fA		
mtltOlG nqtl- n	æG- D - cNc036: Ø Ø0Øæ S:Ø3 60:Ø3N5:Ø3 12SN		
fltc PUPAOnq Eg. eQeq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		

**Tæ2æR TrleAl . P/. - AeA**

- q6: S11æSSpæf
- TæRr . . UGolt- n l ED·/S Vxo leAl . P/. - AeA AeGP/tls lè, el 0 (r V·0l ED)**

**TæRa1 l ene/Ol**

- 2c - cN h4016N:NNlc500T Ø - Spæ i fEP S3T - Spæ El SQ: S11æSSpæ :6 :2c N5400a æl ces 5æ0wcT Ø
- nq uEEs 7y8s 8A æU10690wS 90BUhM fEfbM Spæ i f8l guf

**TæRa2 Tb leAl . P/. - AeA**

- Spæ i fEP Nlc500N:2c S11æSS:Ø3 j n- )Qk hmG i . :cN 14016N 90BUh t 02 N5400a æl ces f
- cN Næpd0641 6prc5:0 cy
- :6 :cN :2c æG- N116Q 69j n- )QkV
- :6 :cN :2c pc2Sl 064069:2c æG- Ø ØæS:Ø3 :6 l SæT j n- )QF

DOUBLE T56 DV3r V10I ED3yf E3Tb301 be/ths luOl lue pD AP. . - /lAlue /eOq Bs c eOnA- h  
I EDq/S - hlue qOlO Ol/tBPleA

T56R TpleAl . P/. - AeA

- Spec i fEl Nlc500cN:2c S11e5S:063 j n- )Ok hmG i o:cN 14016Nc 960BUn t 02 Nc5400a ecl ces f
- cN N4pd0641 6prc5:0 cy
  - :6 :cN :2c pc2Sl 064069:2c αG- B QcS:063 :6 Bl SdT j n- )CN
  - :6 :cN :2c pc2Sl 064069:2c αG- B QcS:063 :6 Bl SdT QcNl63Nc :6 j n- )Ok hmG ;106:656el 06S:063Rf

**DOBU T57 DV3r V.0I ED3yf E3Tp801 be/ths luOl lue pD qeleGA On tnG //eG Ol/tBPl9tAl . O/Oc ele/ - hlue I EDa/A**

**T5a4 r . . UGolt- n f EDi/S Vx o leAl . P/. - AeA AeGP/tls Ue, eU0 (r V.0f ED)**

**T5a4a1 I ene/Ol**

- 2c - cN h4Ol6NcNØ - Spec i fEC :6 - Spec i fPb SØc S11eSSpec :6 :2c Nc5400a æl ces 5eS0wcT Ø nq uEEs 7y8s 8A αU10690wS 90BUnM fEbM Spec i fBl guf

**T5a4a2 Tb leAl . P/. - AeA**

- Spec i fEC :6 - Spec i fPb Nlc50a :2c S11eS:063 Un- )Øk hmG i . :cN 14Ol6NcN90BUn t 02 Nc5400a æl ce sf

- cN N4pd0641 6prc5:0 cy

:6 :cN :2c αG- N4116Q 69Un- )ØkV

:6 :cN :2c pc2Sl 064069:2c αG- Ø ÅeS:063 :6 l SæT Un- )ØN

**DOBU T58 DV3r V.0f ED3yf E3Tb301 be/ths luOl lue pD AP. . - /lAlue f EDa/S - hlue qOlO Ol/tBPl9tAl**

DV d /tntn	U1c5005
yeh/enGe	nq uEEs 7y8s 8AMPf8fAMf8fb
mtltOl G nqtlit- n	αG- D - cNc0Ø00eØNcT

<div>fltc PUPAOnq</div> <div>Eg. eGleq TeuQ, t- P/</div>		DeAle/		poD
	u			
	8			
	A			
	b			
	E			
	P			
	I			

DOBUe TæM DV3r Vı0f ED3yf E3Tb302 be/thş luOl lue poD AP. . - /lAlue f EDa/S - hlue qOlO Ol/tBPle

DV d /tntn	U1c5005			
y ehe/enGe	nq uEEs 7y8s 8AMPf8fAMEf8fb			
mtltOl G- nqtlit- n	αG- D - cNc00000eNtT			
fltc PUPAOnq Eg. eGleq TeuQ, t- P/		DeAle/		po D
	u			
	8			
	A			
	b			
	E			
	P			
	I			



**DOBLE T60 DV3r V.0f ED3yf E3Tb30R be/th luOl lue pD AP. . - /lAlue fEDa/S - hlu qOlO Ol/tBPl**

DV d /tntn	U1c5005		
yeh/enGe	nq uEEs 7y8s 8AMPfAMEf8fb		
mtltOl G- nqtl-t- n	αG- D - cNc0000eNcT		
fltc PUPAOnq Eg. eGleq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		

**DOBLE T61 DV3r V.0f ED3yf E3Tb304 be/th luOl lue pD AP. . - /lAlue fEDa/S - hlu qOlO Ol/tBPl**

DV d /tntn	U1c5005		
yeh/enGe	nq uEEs 7y8s 8AMPfAMPf8fbMPf8f8		
mtltOl G- nqtl-t- n	αG- D - cNc0000eNcT		
fltc PUPAOnq Eg. eGleq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		





DOUBLE T4 DV3r V0fED3yfE3Tb307 be/tls luOl lue pD AP. . - /lAlue fEDq/S - hlue qOlO  
Ol/tBPleA Onq

T44R TpleAl . P/. - AeA

Ol SdT pc2Sl 064CN60:2CN9435:063 SQ: 36: :cNSpæf

T45 r. . uGolt- n l EDfDr\_ VEx /S Vx o leAl . P/. - AeA AeGP/tls lE, eL0 (r V0fDr )

T45a l ene/Ol

- 2c - cN h4Ol6NcNNlc500T 0B - Spæ i fPE :6 - Spæ i fPC SQ: S11æ5Spæ :6 :2c Nc5400a æl ces 5æ0wcT 0B  
nq uEEs 7y8s 8A αU10690wS 960BUnM fEfbM Spæ i f8l guf

T45a2 Tb leAl . P/. - AeA

- Spæ i fPE Nlc500N2cS11æ5S:063j n- )U- x{ hnm)QkhmG i . :cN 14Ol6NcN60BUn t 02Nc5400aæ l ces f

- cN N4pd0641 6prc5:0 cy

:6 :cN :2c dG- N4116Q 69j n- )U- x{ hnm)QkV

:6 :cN :2c pc2Sl 064069:2c dG- 0B QæS:063 :6 l SdT j n- )U- x{ hnm)QNF



DOUBLE T65    DV3r V10f Dr 3yfE3Tb301    be/thu luOl lue pD AP. . - /lAlue /eOq Bs c eOnA- hl ED  
f Dr\_ VEx q/S - hlue qOlOOl/tBPleA

DV d /tntn	U1c5005		
yehe/enGe	nq uEEs 7y8s 8AMPf8fAMPf8fE8		
mtltOlG- nqtlit- n	cG- D - cNc00006dNcT		
fltc PUPAOnq Eg. eGleq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		

T666R TpleAl . P/. - AeA

- Spæ i fPP :6 - Spæ i PC N1c50a :2c S11e5S:063 j n- )U- x{ hnm)Qk hmG i o:cN 14016NcN960BUn t 02 Nc5400a æl cesf
- cN N4pd0641 6prc5:0 cy
- :6 :cN :2c pc2Sl 064069:2c cG- 08 0c6:063 :6 08l Se0T j n- )U- x{ hnm)QW
- :6 :cN :2c pc2Sl 064069:2c cG- 08 0c6:063 :6 08l Se0T 0cN163Nc :6 j n- )U- x{ hnm)Qk hmGf

**DOUBLE Table DV3r V10f Dr 3yf E3Tp801** be/thu luOl lue pD qeleGAOn tnG //eG Ol/tBPl9tAl . O/Oc ele/ - hlue I EDf Dr\_ VEx q/A

DV3r V10f Dr 3yf E3Tp801	xe. enqtnr- n Ol/9tAl - hlue /eSPeAl VxovlutADV AuOU Be /e. eQeq wtlu qtht/enl tnG //eG Ol/tBPl9tAl tn lue /eA - nAe		
DV d /tnn	U1c5005		
yele/enGe	nq uEEs 7y8s 8AMP8fAMP8f8f8		
mtltOlG nqtl- n	cG- D - cNcO808eNt		
fltc PUPAOnq Eg. eQeq TeuQ, t- P/	DeAle/		pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		
	C		

**DOUBLE Table DV3r V10f Dr 3yf E3Tp802** Ec . ls DeAl VP/. - Aev- n8 8eH l- Olm nPc Be/tnnl- r Df tn VO/l 2

DV d /tnn	
yele/enGe	
mtltOlG nqtl- n	
fltc PUPAOnq Eg. eQeq TeuQ, t- P/	

**DOUBLE Table**    **DV3r V.0f Dr 3yf E3Tp80R**    **be/ths luOl lue pD qeleGAOn tnG //eG OPluenltGOl- /**  
**. O/Oc ele/ - hlue l ED.f Dr \_ VEx a/A**

**Tafel r . . uGOlt- n fED. \_ \_ p/S Vx o leAl . P/. - AeA AeGP/tls Ue, el 0 (r V.0\_ \_ p)**

**Tafel I ene/Ol**

- 2c - cN h40l6Nc Nlc500cT B - Spæ i fP7 0NS11æ5Spæ :6 :2c Nc5400a æl ces 5æ0wcT B nq uEEs 7y8s 8A  
αU10690wS 90BUnM fEfbM Spæ i f8l guf

**Tafel Tb DeAl VP/. - AeA**

- Spæ i fP7 Nlc500cN:2c S11æ5S:063 Un- ){ { oQk hmG i . :cN 140l6Nc 90BUn t 02 Nc5400a æl ces f

- cN N4pd0641 6prc5:0 cy

:6 :cN :2c cG- N4116Q 69Un- ){ { oQkV

:6 :cN :2c pc2Sl 064069:2c cG- B QcS:063 :6 l SæT Un- ){ { oQNF

DOBLE TæM DV3r V:0_ _ pByf E3Tb301 be/thu luOl lue pD AP. . - /lAlue fED: _ _ p/S			
DV d /tmn	U1c5005		
y ele/enGe	nq uEEs 7y8s 8AMP8fA		
mtltOl G nqtlit- n	cG- D - cNc00000æNt		
fltc PUPAOnq Eg. eQeq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		

TæææR TpDeAl VP/. - AeA

æ3l SæT pc2Sl 0640N90:20N9435:063 S0c 36: :cN Spæf

Tææ r. . UtG0lt- n EWC d: /S Vx o leAl . P/. - AeA AeGP/tls lè, el 0 (r V:0EWC)

Tææal I ene/Ol

- 2c - cN h40l6Nc N1c500cT 0B - Spæ i fl s 0NS11æ0Spæ :6 :2c Nc5400a æl ces 5æ0wcT 0B nq uEEs 7y8s 8A  
αU10690wS 960BUhM fæfbM Spæ i f8l guf

Tææææ Tb leAl . P/. - AeA

- Spæ i fl s N1c500cN:2c S11æ0S:063 nvK} )Qk hmG i . :cN 140l6Nc 960BUh t 02 Nc5400a æl ces f
- cN N4pd0641 6prc5:0 cy
- :6 :cN :2c cG- N4116Q 69nvK} )QkV
- :6 :cN :2c pc2Sl 064069:2c cG- 0B 0cæ:063 :6 l SæT nvK} )QF



DOBLE Td70 DV3r V·0EWC 3yf E3Tb301 be/tls luOl lue pD AP. . - /lAlue EWC d·/S

DV d /tntn	U1c5005		
yeh/enGe	nq uEEs 7y8s 8AMPf8fA		
mtltOl G- nqtlit- n	αG- D - cNc00006dNcT		
fltc PUPAOnq Eg. eGleq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		
	P		
	I		

Td7aR Tr DeAl VP/. - AeA

αl SeT pc2Sl 064CN90:20N9435:063 S0c 36: :cNSpæf

Td8 r. . UG0lt- n EbEND·y EVdy D·/S Vx o leAl . P/. - AeA AeGP/tls lē, el0 (r V·0y E9)

Td8a1 I ene/Ol

- 2c - cN h40l6Nc Nlc500cT 0B - Spæ i fl u 0NS11α5Spæ :6 :2c Nc5400a æl ces 5eS0wcT 0B nq uEEs 7y8s 8A  
αU10690wS 90BUnM fefbM Spæ i f8l guf

Td8a2 Tb DeAl VP/. - AeA

- Spæ i fl u Nlc500cN:2c S11α5S:063 n. nq - )Bnh} B- )Ck hmG i . :cN 140l6Nc 90BUn t 02 Nc5400a æl ce  
sf

- cN N4pd0641 6prc5:0 cy

:6 :cN :2c αG- N4116Q 69n. nq - )Bnh} B- )Ckf

DOBLE Ta71 DV3r V0y E93y f E3Tb301 be/thu luOl lue poD AP. . - /lAlue EbENDy EVdy D/S

DV d /tntn	U1c5005		
yeh/enGe	nq uEEs 7y8s 8AMP8fA		
fltc PUPAOnq Eg. eGleq TeuQ, t- P/	DeAle/		poD
	u		
	8		
	A		

Tafar TrDeAl VP/. - AeA

q6: S11eSperf

TafMr. . uGolt- n tntltOfkolt- n . uOae leAl . P/. - AeA AeGP/tls le, el 1 (r V1Tr f)

TafMa I ene/Ol

- 2c - cN h4Ol6Nc Nlc500T O - Spec i fl A ONS11eSper :6 :2c Nc540a e1 ceu 5e0wcT O nq uEEs 7y8s 8A  
oU1O69OwS 9OBUhM flebM Spec i fl g8f  
/60:2c 14Ol6Nc 69:2c - h Nlc500T O - Spec i fl AM2c . U- Nlc500T O - Spec i fl 8 . U- C )lSeT . U- 9O  
Nc540a e1 ceu N2Seperc :O3Nw0:cT:6 :2c oG- f

DOBLE Ta72 bf D8 , Ofq bf D h / AeGP/tls le, el 1

			9ennlu	r W weq bOPeA
htU			b p0N	x 3a
. /- htU			u p0 ;hO69e c(:fR	s ; L 36 c(:c3N63R
			I p0N	o3 S556OTs35c t 02 :2c hO69e Nlc500T O nq u8CAby8ss AM33c( xf
a . uGolt- nA			u p0 ;S11eS:O63Nc(:fR	s ; L 36 c(:c3N63R
			I p0N ;34wpcO 69 S11eSR	8
	SOT	u p0 ;cOT 61:fR		u ; L cOT 1O:Nc3:R
		u p0 ;1SO6wc:cO61:fR		u ; L 1SO6wc:cO1O:Nc3:R
		u p0 ;SOT c(:fR		s ; L 36 c(:c3N63R
		E p0N		u ; L ce5: O63O)9c)56ae5: O63R
		u p0 ;cOT c(:fR		s ; L 36 c(:c3N63R
		I p0N		u
		u p0 ;v63:SO6cOc(:fR		s ; L 36 c(:c3N63R
		I p0N ;v63:SO6cO vK} onR		8 ; L } v- n- U- Bqj R
	1SO6wc:cO	u p0 ;65:c: NO6dc(:fR		s ; L 36 c(:c3N63R

				I p0N ;65:c: NØBd æ3d:2R	uP
		n/v)v63:c(:{ S0=	563:Ø5: h06l 0Tc0	us p0N;v643:Qav6TcR	ø S5560TS35c t 02 nq dJ} AuPP)uy8s8s
				ub ;dN4c06Tc3:00æCR p0N	ø S5560TS35c t 02 nq dJ} ubCuPy8su7
			:a1c} 9 v63:Ø5:	uP p0N	x3a
			563:c(: . cN63	u p0 ;563:c(:. cN63 c(:fR	s ; L 36 c(:c3N63R
				I p0N	x3a
				u p0 ;v63:SØc0c(:fR	s ; L 36 c(:c3N63R
				I p0N ;v63:SØc0 vK} ønR	8 ; L } v- n- U- Bøj R
				u p0 ;65:c: NØBd c(:fR	s ; L 36 c(:c3N63R
				I p0N ;65:c: NØBd æ3d:2R	8
		xvØBØBc9 0c35c	xvØBØ SN :cQ caBc9	C p0N	x3a
			xvØBØm0 cNØæ0	C p0N	x3a
				u p0 ;v63:SØc0c(:fR	s ; L 36 c(:c3N63R
				I p0N ;v63:SØc0 vK} ønR	8 ; L } v- n- U- Bøj R
				u p0 ;65:c: NØBd c(:fR	s ; L 36 c(:c3N63R
				I p0N ;65:c: NØBd æ3d:2R	b
			B3T} i n	A8 p0	x3a
		Ucc x11æS:063 8 Ø - Spæ i fEb . U- u )l SæT . U- 90Næ5400a æl ces			
- BeW nltmP/ Øt- n				u p0 ;6pcU:S:4N61:fR	u ; L 6pcU:S:4N10cNæ3:R
			ck40lwc3:væNN	uE p0N	x3a
			wS3495:40c0m	uP p0N	x3a
			6pcU:S:4N	uP p0N	x3a

TæM2 Tb DeAl VP/. - AeA

- Spæ i fl ANlc500N:2c S11æS:03 000æ) S:03 12SN i . :cN 14016N 90BUh t 02 N5400a æl ceuf
- cN N4pd0641 6prc5:0 cy
- :6 :cN :2c pc2Sl 064069:2c æG- 0 0æS:03 :6 l SæT . U f

DOBlæ Ta7R DV3r V1Tr f 3yf E3Tb301 be/tls lu0l lue pD AP. . - /lAlue TfD

DV d /tntn	U1c5005		
y ehe/enGe	nq uEEs 7y8s 8AMPf8fAMPf8fb		
mtlt0LG nqtl t- n	æG- D - cNc036: 0 000æ) S:03 60:03N5:03 12SN		
fltc PUPAOnq Eg. eQeq TeuQ, t- P/		DeAle/	pD
	u		
	8		
	A		
	b		
	E		

TæMR TrDeAl VP/. - AeA

q6: S11æSæf

Tæa0r . . 0G0lt- n l ED1/S Vxo leAl . P/. - AeA AeGP/tls læ, el1 (r V11l ED)

Tæa0a l ene/0

- 2c - cN h4016N NNlc500T 0 - Spæ i fl b S3T - Spæ i fl E S0c S11æSæ :6 :2c N5400a æl ceu 5æ0wcT 0
- nq uEEs 7y8s 8A æU10690wS 90BUhM fæfbM Spæ i f8l g8f

Tæa0æ Tb DeAl VP/. - AeA

- Spæ i fl b Nlc500N:2c S11æS:03 j n- )0k hmG i . :cN 14016N 90BUh t 02 N5400a æl ceuf
- cN N4pd0641 6prc5:0 cy
- :6 :cN :2c æG- N4116Q 69j n- )0kV
- :6 :cN :2c pc2Sl 064069:2c æG- 0 0æS:03 :6 l SæT j n- )0N

DOBlæ Ta74 DV3r V11l ED3yf E3Tb301 r . . 0G0lt- n l ED1/S Vxo Tb leAl . P/. - Ae h / AeGP/tls læ, el1

DV3r V1 1l ED3yf E3Tb301	DV3r V10l ED3yf E3Tb301 x11æ :2c 9æ6t 0d 52S3dcNy uf - Spæ xæC j n- ) j n- )Bk 1S0wc:c0N90N5400a æl ceu 8f
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**Taḏa10aR Tp DeAl VP/. - AeA**

- Spæ i fl E Nlc500cN:2c S11aḏS:Ḑ3 j n- )Ḑk hmG i o:cN 140l6Nc 90BUh t 02 Nc5400a æl ceuf
- cN N4pd0641 6prc5:Ḑ cy
- :6 :cN :2c pc2Sl Ḑ4069:2c cG- Ḑ Ḑcḏ:Ḑ3 :6 Ḑl SḏḐ j n- )ḐW
- :6 :cN :2c pc2Sl Ḑ4069:2c cG- Ḑ Ḑcḏ:Ḑ3 :6 Ḑl SḏḐ ḐNl63Nc :6 j n- )Ḑk hmG ;1Ḑ:656el Ḑḏ:Ḑ3R

**DOBlḏ Taḏ5 DV3r V:1l ED3yfE3Tb301 r . . ḐḐḐt- n l ED: /S Vx o TpleAl . P/. - Ae h / AeGP/tls Ḑḏ, el 1**

<b>DV3r V:1l ED3yfE3Tb301</b>	<b>DV3r V:0l ED3yfE3TpḐ01</b> x11a :2c 9æḑt Ḑd 52S3dcNy uf - Spæ x fEC j n- ) j n- )Bk 1SḐwc:cḐN9ḐNc5400a æl ceu 8f
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**Taḏa11r . . ḐḐḐt- n fED: /S Vx o leAl . P/. - AeA AeGP/tls Ḑḏ, el 1 (r V:1fED)**

**Taḏa11a l ene/Ḑ**

- 2c - cN h40l6NcNNlc500cT Ḑ- Spæ i fl P SḐ: S11aḏSpæ :6 :2c Nc5400a æl ceu 5ḏ0wcT Ḑ nq
- uEEs7y8s8A αU1Ḑ9ḐOwS 90BUhM fḑbM Spæ i f8l g8f

**Taḏa11a2 Tb DeAl VP/. - AeA**

- Spæ i fl P Nlc500cN:2c S11aḏS:Ḑ3 Un- )Ḑk hmG i . :cN 140l6Nc 90BUh t 02 Nc5400a æl ceuf
- cN N4pd0641 6prc5:Ḑ cy
- :6 :cN :2c cG- N4116Ḑ 69Un- )ḐkV
- :6 :cN :2c pc2Sl Ḑ4069:2c cG- Ḑ Ḑcḏ:Ḑ3 :6 l SḏḐ Un- )ḐN

α ḐNwS3TS:6Ḑa :2c c(c54:Ḑ3 69:2c 9æḑt Ḑd - cN h40l6Nc;Nḑ  
SR S: æSN 63c 69y

- uR - hgXH)uUn- gBUngi . gs bV
- 8R - hgXH)uUn- gBUngi . gs EV
- AR - hgXH)uUn- gBUngi . gs PV
- bR - hgXH)uUn- gBUngi . gs l f

DOBLE Tª76 r. . UGOLt- n f EDı/S Vxo Tb leAl . P/. - AeAh / AeGP/tls Uē, eL1

Tªa11ªTleAl . P/. - AeA

αl SαT pc2Sl 064ON90:2ON9435:063 S0c 36: :cNSpæf

Tªa12r. . UGOLt- n l EDıf Dr\_ VExı/S Vxo leAl . P/. - AeA AeGP/tls Uē, eL1 (r Vı1f Dr )

Tªa12a l ene/Ø

- 2c - cN h4Ol6NcNNlc500cT Ø - Spæ i fl l S3T - Spæ i fl C S0c S11æ5Spæ :6 :2c Nc5400a æl ceu 5æ0wcT Ø  
nq uEEs 7y8s 8A αU10690wS 90BUnM fæfbM Spæ i f8l g8f

**Ta72a Tb leAl . P/. - AeA**

- Spæ i fl I Nlc500cN:2c S11æS:03 j n- )U- x{ hnm)Ck hmG i . :cN 14016Nc 90BUn t 02 Nc5400a æl ceuf  
 - cN N4pd0641 6prc5:0 cy

:6 :cN :2c æG- N4116Q 69j n- )U- x{ hnm)CkV

:6 :cN :2c pc2Sl 064069:2c æG- 03 æS:03 :6 l SæT j n- )U- x{ hnm)CN

**DOBLE Ta77 r . . UG0lt- n l EDıf Dr\_ VExı/S Vxo Tb leAl . P/. - Ae h / AeGP/tls 0, el 1**

**Ta72a R TpleAl . P/. - AeA**

- Spæ i fl C Nlc500cN:2c S11æS:03 j n- )U- x{ hnm)Ck hmG i o:cN 14016NcN90BUn t 02 Nc5400a æl ceuf  
 - cN N4pd0641 6prc5:0 cy

:6 :cN :2c pc2Sl 064069:2c æG- 03 æS:03 :6 0l SæT j n- )U- x{ hnm)CN

:6 :cN :2c pc2Sl 064069:2c æG- 03 æS:03 :6 0l SæT æNl63Nc :6 j n- )U- x{ hnm)Ck hmGf

**DOBLE Ta78 r . . UG0lt- n l EDıf Dr\_ VExı/S Vxo TpleAl . P/. - AeAh / AeGP/tls 0, el 1**

**Ta72a Rr . . UG0lt- n f EDı\_ \_ p/S Vxo leAl . P/. - AeA AeGP/tls 0, el 1 (r Vı1\_ \_ p)****Ta72a Ral I ene/0l**

- 2c - cN h4016Nc Nlc500cT 03 - Spæ i fl 7 0NS11æS:03 :6 :2c Nc5400a æl ceu 5æ0wcT 03 nq uEEs 7y8s 8A  
 æU10690wS 90BUnM æfbM Spæ i f8l g8f

**Ta72a R2 Tb leAl . P/. - AeA**

- Spæ i fl 7 Nlc500cN:2c S11æS:03 Un- ) { { 0)Ck hmG i . :cN 14016Nc 90BUn t 02 Nc5400a æl ceuf  
 - cN N4pd0641 6prc5:0 cy

:6 :cN :2c æG- N4116Q 69Un- ) { { 0)CkV

:6 :cN :2c pc2Sl 064069:2c æG- 03 æS:03 :6 l SæT Un- ) { { 0)CN

**DOBLE TæM r . . UGØlt- n fEDı\_ \_ p/S Vxo Tb leAl . P/. - Ae h / AeGP/tls Ue, eL1**

**TæalRæTtleAl . P/. - AeA**

æBl SæT pc2Sl 0640N90:20N9435:063 SQ: 36: :cNSpæf

**Tæal4r . . UGØlt- n EWC dı/S Vxo leAl . P/. - AeA AeGP/tls Ue, eL1 (r Vı1EWC)**

**Tæal4al l ene/O**

- 2c - cN h4016Nc Nlc500T Ø - Spæ i fCs 0NS11æSSpæ :6 :2c Nc5400a æl ces 5æS0wcT Ø nq uEEs7y8s8A  
αU10690wS 90BUnM fEbM Spæ i fBl g8f

**Tæal4æ Tb leAl . P/. - AeA**

- Spæ i fCs Nlc500N:2c S11æS:063 nvK} )Øk hmG i . :cN 14016Nc 90BUn t 02 Nc5400a æl ceuf

- cN N4pd0641 6prc5:0 cy

:6 :cN :2c æG- N4116Q 69nvK} )ØkV

:6 :cN :2c pc2Sl 064069:2c æG- Ø QæS:063 :6 l SæT nvK} )QF

**DOBLE TæB0 r . . UGØlt- n EWC dı/S Vxo Tb leAl . P/. - Ae h / AeGP/tls Ue, eL1**

**Tæal4æTtleAl . P/. - AeA**

æBl SæT pc2Sl 0640N90:20N9435:063 SQ: 36: :cNSpæf



r nneg V  
;360wS:0 cR

VWDy . /- h /c 0h /- n•B- 0/q eSPt. c enl

W1 ml/- qPGt- n

- 2c 106:656e 563960wS35c :cN 0c160 ;hv- BR 106960wS 0N pSNcT 63 dJ} gmv 7PbP)Pf x3a 3ccTcT STT0063Se0960wS:063 5S3 pc 9643T 0 :20N0:c0BS:063SeNS3TS0T T654wc3:f
- 2c 9æ6t 0d:SpæN
  - Spæ vfu h06:656e563960wS35c :cN 0c160V
  - Spæ vf8 dG- 0Tc3:005S:063V
  - Spæ vfA - cN0d c3l 0063wc3: V
  - Spæ vfb - cN 5Sw1S0d3 0c160

N2Sæpc 56w1æ:cT pa :2c :cNcQ

W2 mænlttG0lt- n APc c 0/s

W2a V/- l- G lG nh /c OnGe leAl /e. - /l

DOBlè W1 V/- l- G lG nh /c OnGe leAl /e. - /l

W2a2 p0D tqenlttG0lt- n

DOBlè W2 p0D tqenlttG0lt- n

N0c e:	
be/At- n:	
V/- l- G lA eGltG0lt- n:	
VpW:	
V/e, t- PAVWDy th0ns:	

**W2aR DeAlttnren, t/- nc enl**

**DOBlē WR DeAlttnren, t/- nc enl**

**W2a4 9tc tLAOnq /eAe/, Olt- n**

xTT0063Se0960wS:063 Qæ1 S3: :6 :2c :c52305Se563:c3:N6094Q2c04Nc 69:2c :cN Qc16QM60:2c Qd2:N  
S3T 6pædS:063N 69:2c :cN æp60S:6Qa S3T :2c 5æc3:MSQc d0 c3 2cQcf U452 0960wS:063 5S3 05e4Tc  
QcN005:063N63 :2c 14pædS:063 69:2c Qc16Qf

#####  
#####  
f #####  
ff #####  
fff #####

**fffW2a5 W c c enlA**

xTT0063Se56wwc3:N5S3 pc d0 c3 pa c02c0:2c 5æc3: 60:2c :cN æp60S:6Qa 63 S3a 69:2c 563:c3:N69:2c  
hv- BM60c(Sw1æM6 36:c T0NSdQcwc3: pc:t cc3 :2c :t 6 1SQQcN

#####  
#####  
f #####  
ff #####  
fff #####  
fff

## **WR pD W nh /c OnGe AIOIPA**

- 2NcG- 2SN602SN36: pcc3 N26t 3 pa 563960wS35c SNcNNwc3: :6 pc 363c 563960wBd:6:2c Nlc500tT  
106:656eNlc500S:063f

U:00=c :2c S1106100S:c t 60TN 0B :20N Nc3:c35cf 09:2c h0vU 960:20N cG- 0N 563NNc3: t 02 :2c NS:05  
563960wS35c 0k400cwc3:N;SN Nlc500tT 0B vfb 0B :2c 10cNc3: T654wc3:R S3T :2c0c S0c 36 z/x dFz  
l c0T05:N:6 pc 0c560TcT;0B vfl 0B :2c 10cNc3: T654wc3:RN00=c :2c t 60TNz2SN60M6:2c0t 0Nc N00=c :2c  
t 60TNz602SN36:zf

## **W4 fl0ltGG- nh /c OnGe APc c U/s**

- 2c h0vU960:20NcG- 0N600N36: 563NNc3: t 02 :2c NS:05 563960wS35c 0k400cwc3:N0B :2c Nlc500tT  
106:656f

U:00=c :2c S1106100S:c t 60TN0B :20N Nc3:c35cf

## **W5 xsn0c tGG- nh /c OnGe APc c U/s**

- 2c :cN 5Sw1S0d3 T0T 60T0T 36: 0cl cSec0060N0B :2c cG- f

U:00=c :2c S1106100S:c t 60TN0B :20N Nc3:c35cf 09:2c0c S0c 36 z/x dFz l c0T05:N:6 pc 0c560TcT;0B vfl 69:2c  
10cNc3: T654wc3:RN00=c :2c t 60TNzT0T 60L 6:2c0t 0Nc N00=c :2c t 60TNz60T0T 36:zf

U4wwSQa 69:2c 0cN4e N69d0641N69

:cN Ny  
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W6 f10ltGG- nh /c OnGe /e, tew /e. - /l

o9vfb ØTØS:cN363)56396OwS35cM20N5eS4Nc 0cw0NcN:2c w0NwS:52cNpc:t cc3 :2c hovUS3T:2c NS:Ø  
56396OwS35c Øk400cwc3:N69:2c Nlc500T 1Ø6:656eNlc500S:Ø3f

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f #####  
ff #####  
ff #####  
fff #####  
fff #####  
fff #####  
fff #####  
fff



**W7 DeAl G0c . Otm /e. - /l****DOBLE W4 DeAl G0c . Otm /e. - /l**

r Df yehe/enGe	f eLeGleq ÷	yPn÷	be/qtG	dBAe/, Olt- nA (yehe/enGe l- Ons - BAe/, Olt- nA c Oqe tn W8)
- hghKWg} i Ggi . gs u	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs 8	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs A	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs b	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs E	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs P	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs I	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs C	WNgq 6	WNgq 6		
- hghKWg} i Ggi . gs 7	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs u	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs 8	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs A	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs b	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs E	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs P	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs I	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi . gs C	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs u	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs 8	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs A	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs b	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs E	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs P	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs I	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs C	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogs 7	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ogus	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi oguu	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ugu8	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi uguA	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi ugub	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi uguE	WNgq 6	WNgq 6		
- hg{ xvg} i Ggi uguP	WNgq 6	WNgq 6		

r Df y eħ/enGe	f eĽGleq ÷	y Pn÷	be/qtG	d BAe/, Olt- nA (y eħ/enGe l- Ons - BAe/, Olt- nA c Oqe tn WĖ)
- hg{ xvg} i Ggi øguI	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øguC	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øgu7	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øg8s	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øg8u	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øg88	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øg8A	WĖNgq 6	WĖNgq 6		
- hg{ xvg} i Ggi øg8b	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi . gs u	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi . gs 8	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi . gs A	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi . gs b	q 6	q 6	3fSf	nw1:a - cN h4OĽ6NĖ
- hgFFvg} i Ggi . gs E	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs u	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs 8	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs A	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs b	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs E	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs P	WĖNgq 6	WĖNgq 6		
- hgFFvg} i Ggi øgs I	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gs u	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gs 8	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gs A	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gs b	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gs E	q 6	q 6	3fSf	nw1:a - cN h4OĽ6NĖ
- hgxxh)si xUg} i Ggi . gs P	q 6	q 6	3fSf	nw1:a - cN h4OĽ6NĖ
- hgxxh)si xUg} i Ggi . gs I	q 6	q 6	3fSf	nw1:a - cN h4OĽ6NĖ
- hgxxh)si xUg} i Ggi . gs C	q 6	q 6	3fSf	nw1:a - cN h4OĽ6NĖ
- hgxxh)si xUg} i Ggi . gs 7	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi . gus	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi øgs u	WĖNgq 6	WĖNgq 6		
- hgxxh)si xUg} i Ggi øgs 8	WĖNgq 6	WĖNgq 6		
- hgxxh)s /Gqg} i Ggi . gs u	WĖNgq 6	WĖNgq 6		
- hgxxh)s /Gqg} i Ggi . gs 8	WĖNgq 6	WĖNgq 6		
- hgxxh)s /Gqg} i Ggi . gs A	WĖNgq 6	WĖNgq 6		

r Df y e h e / e n G e	f e l l e G l e q ÷	y P n ÷	b e / q t G l	d B A e / , O l t - n A (y e h e / e n G e l - O n s - B A e / , O l t - n A c O q e t n W B)
- h g x h ) s / G q g } i G g i . g s b	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g s E	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g s P	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g s I	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g s C	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g s 7	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u s	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u u	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u 8	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u A	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u b	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u E	q 6	q 6	3 f S f	n w 1 : a - c N h 4 O l 6 N ċ
- h g x h ) s / G q g } i G g i . g u P	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u I	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u C	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g u 7	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g 8 s	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . g 8 u	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . o g s u	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . o g s 8	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . o g s A	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . o g s b	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s / G q g } i G g i . o g s E	q 6	q 6	3 f S f	n w 1 : a - c N h 4 O l 6 N ċ
- h g x h ) s / G q g } i G g i . o g s P	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s u	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s 8	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s A	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s b	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s E	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s P	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s I	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s C	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g s 7	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g u s	W Ē N g q 6	W Ē N g q 6		
- h g x h ) s m x - g } i G g i . g u u	W Ē N g q 6	W Ē N g q 6		

r Df y eħ/enGe	f eħGleq÷	y Pn÷	be/qtG	d BAe/, Olt- nA (y eħ/enGe l- Ons - BAe/, Olt- nA c Oqe tn Wß)
- hgx h)s nħ - g} i Ggi . gu8	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi . guA	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi . gub	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi . guE	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi øgs u	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi øgs 8	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi øgs A	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi øgs b	WĚNgq 6	WĚNgq 6		
- hgx h)s nħ - g} i Ggi øgs E	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs u	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs 8	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs A	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs b	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs E	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs P	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs I	WĚNgq 6	WĚNgq 6		
- hgx h)s Unvg} i Ggi . gs C	WĚNgq 6	WĚNgq 6		
- hgx h)s - Bx g} i Ggi . gs u	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gs u	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gs 8	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gs A	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gs b	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gs E	q 6	q 6	3fSf	nw1:a - cN h4O16Nc
- hgx h)ui x Ug} i Ggi . gs P	q 6	q 6	3fSf	nw1:a - cN h4O16Nc
- hgx h)ui x Ug} i Ggi . gs I	q 6	q 6	3fSf	nw1:a - cN h4O16Nc
- hgx h)ui x Ug} i Ggi . gs C	q 6	q 6	3fSf	nw1:a - cN h4O16Nc
- hgx h)ui x Ug} i Ggi . gs 7	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi . gus	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi øgs u	WĚNgq 6	WĚNgq 6		
- hgx h)ui x Ug} i Ggi øgs 8	WĚNgq 6	WĚNgq 6		
- hgx h)u/Gq g} i Ggi . gs u	WĚNgq 6	WĚNgq 6		
- hgx h)u/Gq g} i Ggi . gs 8	WĚNgq 6	WĚNgq 6		
- hgx h)u/Gq g} i Ggi . gs A	WĚNgq 6	WĚNgq 6		
- hgx h)u/Gq g} i Ggi . gs b	WĚNgq 6	WĚNgq 6		
- hgx h)u/Gq g} i Ggi . gs E	WĚNgq 6	WĚNgq 6		



<b>r Df yehe/enGe</b>	<b>f eLeGleq÷</b>	<b>y Pn÷</b>	<b>be/qtG</b>	<b>d BAe/, Olt- nA (yehe/enGe l- Ons - BAe/, Olt- nA c Oqe tn Wß)</b>
- hgxh)u/Gqg} i Ggi . gsP	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . gsI	q 6	q 6	3ßf	nw1:a - cN h4O16Nt
- hgxh)u/Gqg} i Ggi . gsC	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . gs7	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . gus	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . guu	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . gu8	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . guA	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . gub	WNgq 6	WNgq 6		
- hgxh)u/Gqg} i Ggi . guE	q 6	q 6	3ßf	nw1:a - cN h4O16Nt
- hgxh)u/Gqg} i Ggi . guP	WNgq 6	WNgq 6		



r nneg x  
;360wS:0 cR

VWDy . /- h /c 0h / /- 0qAtqe eSPt. c enl

x a1 ml/- qPGt- n

- 2c 106:656e 563960wS35c :cN 0c160 ;hv- BR 106960wS 0N pSNcT 63 dJ} gnv 7PbP)Pf x3a 3ccTcT STT0063Se0960wS:063 5S3 pc 9643T 0 :2N0B:c0BS:063SeNS3TS0T T654wc3:f
- 2c 9æ6t 0d:SpæN
  - Spæ mfu h06:656e563960wS35c :cN 0c160V
  - Spæ m8 cG- 0Tc3:005S:063V
  - Spæ mFA - cN0Bd c3l 0063wc3: V
  - Spæ mfb - cN 5Sw1S0d3 0c160

N2Sæpc 56w1æ:cT pa :2c :cNc0f

x a2 mjenlthtG0lt- n APc c 0/s

x a2a1 V/- l- G lG nh /c OnGe leAl /e. - /l

DOBlæ x a1 V/- l- G lG nh /c OnGe leAl /e. - /l

x a2a2 pD tqenlthtG0lt- n

DOBlæ x a2 pD tqenlthtG0lt- n

N0c e:	
be/At- n:	
V/- l- G lA eGltG0lt- n:	
VpWf:	
V/e, t- PAVWDy th0ns:	

x 2R DeAltnren, t/- nc enl

DOBl x R DeAltnren, t/- nc enl

x 2a 9tc tLAOnq /eAe/, Olt- n

xTT063Se090wS:063 QæI S3: :6 :2c :c5230Se563:c3:N6094Q2c04Nc 69:2c :cN Q16QM60:2c 0d2:N  
S3T 6pædS:063N 69:2c :cN æp606:6Qa S3T :2c 5æ3:MSQc d0 c3 2cQcf U452 090wS:063 5S3 05e4Tc  
QcN06:063N63 :2c 14pæS:063 69:2c Q16Qf

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fff x 2a W c c enlA

xTT063Se56wwc3:N5S3 pc d0 c3 pa c02c0:2c 5æ3: 60:2c :cN æp606:6Qa 63 S3a 69:2c 563:c3:N69:2c  
hv- BM6Oc(Sw1æM6 36:c T0Nd0cwc3: pc:t cc3 :2c :t 6 1SQ0cN

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**x aR pD W nh /c OnGe AlOlPA**

- 200d- 2SN602SN36: pcc3 N26t 3 pa 56390wS35c SNNw3: :6 pc 363c 56390w3d:6:2c Nlc500T  
106:656eNlc500S:063f

U:00=c :2c S1106100S:c t 60TN 0B :20N Nc3:c35cf 09:2c hovU 960:20N cG- 0N 563NNc3: t 02 :2c NS:05  
563960wS35c Qk400cwc3:N;SN Nlc500cT 0mfb 0B :2c 10cNc3: T654wc3:R S3T :2c0c SQc 36 z/x0Fz  
l cOT0:N:6 pc Qc560TcT;0 mfl 0B :2c 10cNc3: T654wc3:RN00=c:2c t 60TNz2SN602M6:2c0c 0Nc N00=c:2c  
t 60TNz602SN36:zf

**x af lOltGG nh /c OnGe APc c U/s**

- 2c hovU90:2NcG- 0N600N36: 563NNc3: t 02:2c NS:056390wS35c Qk400wc3:N08:2c Nlc500tT  
106:656ef

U:00=c:2c S1106100S:c t 60TN03:20NNc3:c35cf

x 5 x snOc tGG nh /c OnGe APc c U/s

- 2c :cN 5Sw1Sd3 T0T 60T0T 36: 0cl cSec006N0B :2c dG- f

U:00=c:2c S11061008:c t 60FN08:20NN3:c35cf09:2c0c S0c 36 z/x dFzI c0T05:N:6 pc 0c560TcT;08 mfl 69  
:2c 10cNc3: T654wc3:RN00=c:2c t 60FNzT0T 60z 6:2c0t 0Nc N00=c:2c t 60FNz60T0T 36:zf

U4wwSQa 69:2c QN4eN69d0641N69

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x æ f l O l t G G n h / c O n G e / e , t e w / e . - / l

o9mfb ØTØS:cN363)56396OwS35cM20N5eS4Nc 0cw0NcN:2c w0NwS:52cNpc:t cc3 :2c hœvUS3T:2c NS:Ø  
56396OwS35c Øk400cwc3:N69:2c Nlc500T 1Ø6:656eNlc500S:Ø63f

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x a7 DeAl G0c . Otm /e. - /l

DOBlé x a7 DeAl G0c . Otm /e. - /l

r Df ye/e/enGe	f e/eGeq÷	yPn÷	be/qtQ	dBAe/, Olt- nA (ye/e/enGe l- Ons - BAe/, Olt- nA c Oqe tn x a8)
- hghKWgBUngi . gs u	WNgq 6	WNgq 6		
- hghKWgBUngi . gs 8	WNgq 6	WNgq 6		
- hghKWgBUngi . gs A	WNgq 6	WNgq 6		
- hghKWgBUngi . gs b	WNgq 6	WNgq 6		
- hghKWgBUngi . gs E	WNgq 6	WNgq 6		
- hghKWgBUngi . gs P	WNgq 6	WNgq 6		
- hghKWgBUngi . gs I	WNgq 6	WNgq 6		
- hghKWgBUngi . gs C	WNgq 6	WNgq 6		
- hghKWgBUngi . gs 7	WNgq 6	WNgq 6		
- hghKWgBUngi . gus	WNgq 6	WNgq 6		
- hghKWgBUngi . guu	WNgq 6	WNgq 6		
- hghKWgBUngi . gu8	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs u	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs 8	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs A	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs b	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs E	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs P	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs I	WNgq 6	WNgq 6		
- hg{ xvgBUngi . gs C	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs u	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs 8	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs A	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs b	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs E	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs P	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs I	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs C	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogs 7	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogus	WNgq 6	WNgq 6		
- hg{ xvgBUngi oguu	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogu8	WNgq 6	WNgq 6		
- hg{ xvgBUngi ogaA	WNgq 6	WNgq 6		

r Df y e h e / e n G e	f e l e G l e q ÷	y P n ÷	b e / q t G l	d B A e / , O l t - n A (y e h e / e n G e l - O n s - B A e / , O l t - n A c O q e t n x ð)
- h g { x v g B U n g i o g u b	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g u E	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g u P	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g u l	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g u C	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g u 7	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g 8 s	W e N g q 6	W e N g q 6		
- h g { x v g B U n g i o g 8 u	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i . g s 8	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i . g s A	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i . g s b	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i . g s E	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i o g s u	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i o g s 8	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i o g s A	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i o g s b	W e N g q 6	W e N g q 6		
- h g F F v g B U n g i o g s E	W e N g q 6	W e N g q 6		
- h g x h ) s i x U g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s j n - g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s j n - g B U n g i o g s u	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s 8	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s A	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s b	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s E	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s P	W e N g q 6	W e N g q 6		
- h g x h ) s U n - g B U n g i . g s l	W e N g q 6	W e N g q 6		
- h g x h ) s U - x g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s U - x g B U n g i o g s u	W e N g q 6	W e N g q 6		
- h g x h ) s U - x g B U n g i o g s 8	q 6	q 6	3 f S f	n w 1 : a - c N h 4 O l 6 N e
- h g x h ) s U - x g B U n g i o g s A	W e N g q 6	W e N g q 6		
- h g x h ) s { { o g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s n v K g B U n g i . g s u	W e N g q 6	W e N g q 6		
- h g x h ) s B n F g B U n g i . g s u	W e N g q 6	W e N g q 6		



r Df yelē/enGe	f e lē q e q ÷	y P n ÷	b e / q t q	d B A e / , O l t - n A (y e lē / e n G e l - O n s - B A e / , O l t - n A c O q e t n x ð)
- h g x h ) u i x U g B U n g i . g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u j n - g B U n g i . g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u j n - g B U n g i o g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s 8	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s A	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s b	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s E	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s P	Wē N g q 6	Wē N g q 6		
- h g x h ) u U n - g B U n g i . g s I	Wē N g q 6	Wē N g q 6		
- h g x h ) u U - x g B U n g i . g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u U - x g B U n g i o g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u U - x g B U n g i o g s 8	q 6	q 6	3 f S f	n w 1 : a - c N h 4 O l 6 N c
- h g x h ) u U - x g B U n g i o g s A	Wē N g q 6	Wē N g q 6		
- h g x h ) u { { o g B U n g i . g s u	Wē N g q 6	Wē N g q 6		
- h g x h ) u n v K g B U n g i . g s u	Wē N g q 6	Wē N g q 6		

D.8 Observations

Additional information relevant to the technical content of the PCTR is given here. ....

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## Bibliography

- [1] ISO/IEC 9646-1, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 1: General concepts*
- [2] ISO/IEC 9646-2, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 2: Abstract Test Suite specification*
- [3] ISO/IEC 9646-3, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 3: The Tree and Tabular Combined Notation (TTCN)*
- [4] ISO/IEC 9646-4, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 4: Test realization*
- [5] ISO/IEC 9646-5, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 5: Requirements on test laboratories and clients for the conformance assessment process*
- [6] ISO/IEC 9646-6, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 6: Protocol profile test specification*
- [7] ISO/IEC 9646-7, *Information technology — Open Systems Interconnection — Conformance testing methodology and framework — Part 7: Implementation Conformance Statements*
- [8] ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation — Part 1*
- [9] EN 12795, *Road transport and traffic telematics — Dedicated Short Range Communication (DSRC) — DSRC data link layer: medium access and logical link control*
- [10] ISO 19105, *Geographic information — Conformance and testing*