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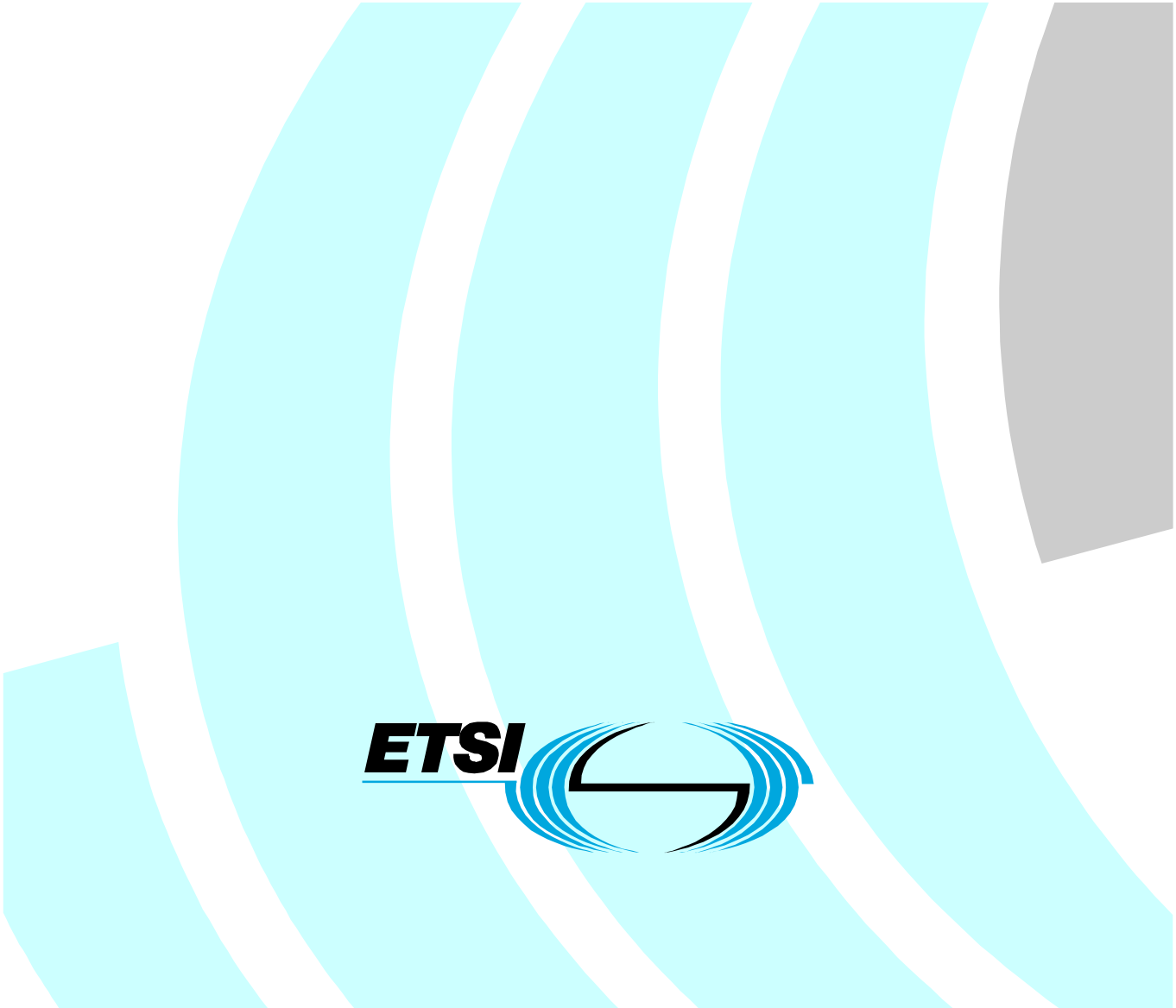
Technical Specification

Electromagnetic compatibility and Radio spectrum Matters (ERM); 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)



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Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 2, sub-part 2 of a multi-part deliverable covering Road Transport and Traffic Telematics (RTTT); Test specifications for Dedicated Short Range Communication (DSRC) transmission equipment, as identified below:

Part 1: "DSRC data link layer: medium access and logical link control";

Part 2: "DSRC application layer";

Sub-part 1: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Sub-part 2: "Test Suite Structure and Test Purposes (TSS&TP)";

Sub-part 3: "Abstract Test Suite (ATS) and partial PIXIT proforma".

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the ERM/TG37 Dedicated Short Range Communication (DSRC); Application layer.

The objective of the present document is to provide a basis for conformance tests for DSRC equipment giving a high probability of inter-operability between different manufacturer's equipment.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [5] and ISO/IEC 9646-2 [6]) as well as the ETSI rules for conformance testing (ETS 300 406 [4]) are used as a basis for the test methodology.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

[1] CEN EN 12834 (2003): "Road transport and traffic telematics - Dedicated Short Range Communication (DSRC) - DSRC application layer".

[2] CEN EN 12253 (2003): "Road transport and traffic telematics - Dedicated short-range communication - Physical layer using microwave at 5,8 GHz".

[3] CEN EN 13372 (2003): "Road transport and traffic telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT".

[4] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".

[5] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".

[6] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification".

[7] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".

[8] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statement".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-7 [8], EN 12253 [2], EN 12834 [1] and EN 13372 [3] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [5], ISO/IEC 9646-6 [7], ISO/IEC 9646-7 [8], EN 12834 [1] and the following apply:

ASP	Abstract Service Primitive
ATS	Abstract Test Suite
BI	Invalid Behaviour tests
BST	Beacon Service Table
BV	Valid Behaviour tests
DSRC	Dedicated Short Range Communication
IUT	Implementation Under Test
LID	Link IDentifier
MAC	Medium Access Control
OBU	On Board Unit
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PrWRq	MAC frame Private Window Request
RSU	Road Side Unit
SUT	System Under Test
TP	Test Purpose
TSS	Test Suite Structure
VST	Vehicle Service Table

4 Test Suite Structure (TSS)

4.1 Structure

Table 1 shows the Application Test Suite Structure (TSS) including its subgroups defined for the conformance testing.

Table 1: TSS for DSRC Application

Group	Type of SUT	Behaviour
Application Layer – T-Kernel	On Board Unit	Valid behaviour
		Invalid behaviour
	Road Side Unit	Valid behaviour
		Invalid behaviour
Application Layer – I-Kernel	On Board Unit	Valid behaviour
		Invalid behaviour
	Road Side Unit	Valid behaviour
		Invalid behaviour

4.2 Test groups

The test groups are organized in three groups. The first is designed for the application T-kernel testing. The second is designed for Application I-kernel testing and the third is designed for Application B-kernel testing.

4.3 Type of SUT test groups

The type of SUT test groups are organized in two groups. The first is designed for the On Board Unit (OBU) testing and the second is designed for Road Side Unit testing (RSU).

4.4 Behaviour test groups

4.4.1 Valid Behaviour (BV) tests

This test sub group shall verify that the IUT reacts in conformity with the EN, after receipt or exchange of a valid Protocol Data Units (PDUs). Valid PDUs means that the exchange of messages and the content of the exchanged messages are considered as valid.

4.4.2 Invalid Behaviour (BI) tests

This test sub group shall verify that the IUT reacts in conformity with the EN, after receipt of a syntactically invalid PDU.

5 Test Purposes (TP)

5.1 Introduction

5.1.1 TP definition conventions

The TPs are defined following particular rules as shown in table 2.

Table 2: TP definition rules

TP Id according to the TP naming conventions	Title
	Reference
	Initial condition
	Stimulus and Expected behaviour.

TP Id	The TP Id is a unique identifier. It shall be specified according to the TP naming conventions defined in the sub-clause below.
Title	Short description of test purpose objective.
Reference	The reference should contain the references of the subject to be validated by the actual TP (specification reference, clause, and paragraph).
PICS selection	PICS conformance statements are evaluated in a Boolean expression. If the result of the expression is TRUE, the test shall be performed. A references table cell is TRUE in case the related protocol feature is declared to be implemented.
TC reference	Shows the reference number of the related Test Case in the ATS.
Initial condition	The condition defines in which initial state the IUT has to be to apply the actual TP.
Stimulus and Expected Behaviour	Definition of the events the tester performs, and the events that are expected from the IUT to conform to the base specification.

5.1.2 TP naming conventions

The identifier of the TP is built according to table 3.

Table 3: TP naming convention

Identifier:	**TP/<layer>/<sut>/<x>-<nn>**		
	<layer>	AL-T	Application Layer - T-Kernel
		AL-I	Application Layer - I-Kernel
	<sut> = type of SUT	OBU	On Board Unit
		RSU	Road Side Unit
	x = Type of testing	BV	Valid Behaviour Tests
		BI	Invalid Behaviour Tests
	<nn> = sequential number	(01-99)	Test Purpose Number

5.1.3 Sources of TP definitions

All TPs are specified according to EN 12834 [1].

5.2 Application T-kernel test purposes for On Board Unit (OBU)

5.2.1 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.

Test purposes:

TP/AL-T/OBU/BV/01	**Verify that the OBU can receive GET.request and manage GET.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS selection: Table A.1/1 AND Table E.2/11 AND Table E.3/9
	TC reference: TC_AL_T_OBU_BV_01
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends GET.request with FlowControl = 7, requesting retrieval of data available in the IUT without late response. 2. Verify IUT provides the data requested in step 1 in a GET-Response with proper ReturnStatus.

TP/AL-T/OBU/BV/02	**Verify that the OBU can receive SET.request with mode = 1 and manage SET.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/12 AND Table E.3/10
	TC reference: TC_AL_T_OBU_BV_02
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 1 and FlowControl = 7, requesting storage of data = DATA in the IUT. 2. Verify proper ReturnStatus indicated in the SET-Response.

TP/AL-T/OBU/BV/03	**Verify that the OBU can receive SET.request with mode = 1 and GET.request, and manage SET.response and GET.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/11 AND Table E.2/12 AND Table E.3/9 AND Table E.3/10
	TC reference: TC_AL_T_OBU_BV_03
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 1 and FlowControl = 7, requesting storage of data = DATA1 in the attribute given by EID = EID1 and attributeId = attributeID1 in the IUT. 2. Verify proper ReturnStatus indicated in the SET-Response. 3. Tester sends GET.request in order to retrieve the data sent in step 1. 4. Verify proper ReturnStatus indicated in the GET-Response. 5. Verify that the data retrieved in step 3 is identical to the data sent in step 1. 6. Tester sends SET.request with mode = 1 and FlowControl = 7, requesting storage of data = DATA2 in the attribute given by EID = EID1 and attributeId = attributeID1 in the IUT. 7. Verify proper ReturnStatus indicated in the SET-Response. 8. Tester sends GET.request in order to retrieve the data sent in step 6. 9. Verify proper ReturnStatus indicated in the GET-Response. 10. Verify that the data retrieved in step 8 is identical to the data sent in step 6.

TP/AL-T/OBU/BV/04	**Verify that the OBU can receive SET.request with mode = 0 and GET.request and GET.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/9 AND Table E.2/11 AND Table E.3/6 AND Table E.3/10
	TC reference: TC_AL_T_OBU_BV_04
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 0 and FlowControl = 4, requesting storage of DATA1 in the attribute given by EID = EID1 and attributeId = attributeID1 of the IUT. 2. Verify proper operation of IUT by retrieval of EID = EID1, attributeId = attributeID1 using GET.request. 3. Tester sends SET.request with mode = 0 and FlowControl = 4, requesting storage of DATA2 in the attribute given by EID = EID1 and attributeId = attributeID1 in the IUT. 4. Verify proper operation of IUT by retrieval of EID = EID1, attributeId = attributeID1 using GET.request.

TP/AL-T/OBU/BV/05	**Verify that the OBU can receive SET.request with mode = 0 and GET.request and GET.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.3/6 AND Table E.2/11 AND Table E.3/9
	TC reference: TC_AL_T_OBU_BV_05
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 0 and FlowControl = 1, requesting storage of DATA1 in the data element given by EID = EID1 and attributeId = attributeID1 of the IUT. 2. Verify proper operation of IUT by retrieval of EID = EID1, attributeId = attributeID1 using GET.request. 3. Tester sends SET.request with mode = 0 and FlowControl = 1, requesting storage of DATA2 in the data element given by EID = EID1 and attributeId = attributeID1 in the IUT. 4. Verify proper operation of IUT by retrieval of EID = EID1, attributeId = attributeID1 using GET.request.

TP/AL-T/OBU/BV/06	**Verify that the OBU can receive SET.request with mode = 0 and with LID = broadcast after initialization,and GET.request and manage GET.response, with private LID**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.3/4 AND Table E.2/11 AND Table E.3/9
	TC reference: TC_AL_T_OBU_BV_06
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 0, FlowControl = 1 and LID = broadcast, requesting storage of data = DATA1 in the IUT. 2. Tester sends GET.request in order to retrieve the data sent in step 1. 3. Verify that the data retrieved in step 2 is identical to the data sent in step 1. 4. Tester sends SET.request with mode = 0 and FlowControl = 1 and LID = broadcast, requesting storage of data = DATA2 in the IUT. 5. Tester sends GET.request in order to retrieve the data sent in step 4. 6. Verify that the data retrieved in step 5 is identical to the data sent in step 4.

TP/AL-T/OBU/BV/07	**Verify that the OBU can receive SET.request with mode = 0 and with LID = broadcast without initialization, and GET.request and manage GET.response, with private LID**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.3/4 AND Table E.2/11 AND Table E.3/9
	TC reference: TC_AL_T_OBU_BV_07
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends SET.request with mode = 0, FlowControl = 1 and LID = broadcast, requesting storage of data = DATA1 in the IUT. 2. Perform initialization with the IUT. 3. Tester sends GET.request in order to retrieve the data sent in step 1. 4. Verify that the data retrieved in step 2 is identical to the data sent in step 1. 5. Tester sends RELEASE command. 6. Tester immediately, i.e. before beacon time-out, sends SET.request with mode = 0, FlowControl = 1 and LID = broadcast, requesting storage of data = DATA2 in the IUT. 7. Repeat step 2 after beacon time-out. 8. Tester sends GET.request in order to retrieve the data sent in step 6. 9. Verify that the data retrieved in step 8 is identical to the data sent in step 6.

TP/AL-T/OBU/BV/08	**Verify that the OBU can receive ACTION.request with mode = 1 and manage ACTION.response, with LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/13 AND Table E.3/11
	TC reference: TC_AL_T_OBU_BV_08
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends ACTION.request with mode = 1 and FlowControl = 7. 2. Verify proper operation of IUT by checking the ACTION.response.

TP/AL-T/OBU/BV/09	**Verify that the OBU can receive ACTION.request with mode = 0 and LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/10
	TC reference: TC_AL_T_OBU_BV_09
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends ACTION.request with mode = 0 and FlowControl = 4. 2. Verify proper operation of IUT by human observation of IUT behaviour.
NOTE: The applicant shall declare the SET_MMI ACTION type if possible, that allows human observation of command execution.	

TP/AL-T/OBU/BV/10	**Verify that the OBU can receive ACTION.request with mode = 0 and LID = private**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/7
	TC reference: TC_AL_T_OBU_BV_10
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends ACTION.request with mode = 0 and FlowControl = 1. 2. Verify proper operation of IUT by human observation of IUT behaviour.
NOTE: The applicant shall declare the SET_MMI ACTION type if possible, that allows human observation of command execution.	

TP/AL-T/OBU/BV/11	**Verify that the OBU can receive ACTION.request with mode = 0 with LID = broadcast after initialization**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1 AND Table E.2/5
	TC reference: TC_AL_T_OBU_BV_11
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends ACTION.request with mode = 0, FlowControl = 1 and LID = broadcast. 2. Verify proper operation of IUT by human observation of IUT behaviour.
NOTE: The applicant shall declare the SET_MMI ACTION type if possible, that allows human observation of command execution.	

TP/AL-T/OBU/BV/12	**Verify that the OBU can receive and manage ACTION.request with mode = 0 and with LID = broadcast without initialization**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table E.2/5
	TC reference: TC_AL_T_OBU_BV_12
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends ACTION.request with mode = 0, FlowControl = 1 and LID = broadcast. 2. Verify proper operation of IUT by human observation of IUT behaviour.
NOTE: The applicant shall declare the SET_MMI ACTION type if possible, that allows human observation of command execution.	

TP/AL-T/OBU/BV/13	**Verify that the OBU can receive and manage non-fragmented APDUs with random PDU number**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table A.1/1 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BV_13
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SERVICE.request with mode = 1 and FlowControl = 7 with a random choice of PDU number in the allowed range of 2 through 31. 2. Verify IUT correctly replies with SERVICE.response. 3. Repeat steps 1 and 2 until all allowed values of the PDU number field are tested.
NOTE: SERVICE shall be out of GET, SET, ACTION, as declared by the applicant.	

TP/AL-T/OBU/BV/14	**Verify that the OBU can receive and manage multiplexed APDUs from two different applications**
	Reference: EN 12834 [1] clauses 6.3.5 and 6.3.9
	PICS Selection: Table A.1/1 AND Table A.2/6 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BV_14
	Initial condition: OBU already initialized for two applications #A and #B, waiting to be served by tester. It is allowed to be #A = #B, i.e. APDUs related only to a single type of application, but using different EIDs.
	Stimulus and Expected Behaviour: 1. Tester sends SERVICE.request (#a) with mode = 1 and FlowControl = 7 for #A. 2. Verify IUT correctly responds with SERVICE.response (#a). 3. Tester sends SERVICE.request (#b) with mode = 1 and FlowControl = 7 for #B. 4. Verify IUT correctly responds SERVICE.response (#b). 5. Tester sends SERVICE.request (#c) with mode = 1 and FlowControl = 7 for #A. 6. Verify IUT correctly responds SERVICE.response (#c). 7. Tester sends SERVICE.request (#d) with mode = 1 and FlowControl = 7 for #B. 8. Verify IUT correctly responds SERVICE.response (#d).
NOTE: SERVICE shall be out of GET, SET, ACTION, as declared by the applicant. EID = 0 is not allowed as basic EID of an application, however it might be used in addition to the two other EIDs!	

TP/AL-T/OBU/BV/15	**Verify that the OBU can receive and manage concatenated APDUs from a single application**
	Reference: EN 12834 [1] clause 6.3.7
	PICS Selection: Table A.1/1 AND Table A.6/8 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BV_15
	Initial condition: OBU already initialized for an application, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends concatenated T-APDUs with mode = 1 and FlowControl = 7. 2. Verify IUT correctly replies concatenated responses.
NOTE: APDUs to be concatenated shall be out of GET, SET, ACTION, EVENT-REPORTas declared by the applicant.	

TP/AL-T/OBU/BV/16	**Verify that the OBU can receive and manage concatenated and chained APDUs from a single application**
	Reference: EN 12834 [1] clause 6.3.8
	PICS Selection: Table A.1/1 AND Table A.6/9 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BV_16
	Initial condition: OBU already initialized for test application, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends concatenated T-APDUs with mode = 1 and FlowControl = 7. 2. Verify IUT correctly replies concatenated responses.
NOTE: APDUs to be chained shall be out of GET, SET, ACTION, EVENT-REPORT as declared by the applicant.	

5.2.2 BI test purposes

Test subgroup objective:

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

Test purposes:

TP/AL-T/OBU/BI/01	**Verify that the OBU can receive and manage PDUs addressed to the Broadcast Kernel in case the OBU only supports the Initialization Kernel and the Transport Kernel**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table A.1/1 AND NOT Table A.1/3 AND Table E.2/11 AND Table E.3/9 AND Table E.2/12 AND Table E.3/10
	TC reference: TC_AL_T_OBU_BI_01
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends a GET.request to retrieve EID = EID1 and attributeId = attributeID1. 2. Verify proper ReturnStatus indicated in the GET.response. 3. Verify that the data retrieved in step 2 is as defined. 4. Tester sends SET.request () with mode = 1 and FlowControl = 7 with private LID and with the PDU number set to the illegal value of 0 in order to set data = DATA2 in the attribute given by EID = EID1 and attributeId = attributeID1. 5. Observe whether IUT prompts the command with any kind of error status. 6. Tester sends a GET.request to retrieve EID = EID1 and attributeId = attributeID1. 7. Verify that the data retrieved in step 7 is equal to the data retrieved in step 1. 8. Repeat steps 4 through 7 with the PDU number set to the illegal value of 1.

TP/AL-T/OBU/BI/02	**Verify that the OBU can receive and manage PDUs addressed to the Broadcast Kernel in case the OBU only supports the Initialization Kernel and the Transport Kernel**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table A.1/1 AND NOT Table A.1/3
	TC reference: TC_AL_T_OBU_BI_02
	Initial condition: OBU awake but not yet.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request with the PDU number set to 0, allocating N5 public uplink windows. 2. Verify that the IUT does not send PrWRq. 3. Repeat steps 1 and 2 with the PDU number set to 1.

TP/AL-T/OBU/BI/03	**Verify that the OBU can receive and manage non-fragmented PDUs with wrong fragment counter value**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table A.1/1 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BI_03
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SERVICE.request with mode = 1 and FlowControl = 7 with the fragment counter set to any value different to 0. 2. Verify IUT does not respond with SERVICE.response. 3. Repeat steps 1 and 2 for all missing possible wrong values of the fragment counter, except for the correct value 0. 4. Repeat step 1 with correct value of fragment counter. 5. Verify IUT correctly responds.
NOTE: SERVICE shall be out of SET, GET, ACTION, as declared by the applicant.	

TP/AL-T/OBU/BI/04	**Verify that the OBU can receive and manage non-fragmented PDUs with wrong fragment counter value**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table A.1/1
	TC reference: TC_AL_T_OBU_BI_04
	Initial condition: OBU awake but not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request with the fragment counter set to any value different to 0, allocating N5 public uplink windows. 2. Verify IUT does not respond with PrWRq. 3. Repeat steps 1 and 2 for all missing possible wrong values of the fragment counter, except for the correct value 0. 4. Repeat step 1 with correct value of fragment counter. 5. Verify IUT correctly responds with PrWRq.

TP/AL-T/OBU/BI/05	**Verify that the OBU can receive and manage concatenated but not chained APDUs from a single application with argumentError in one APDU**
	Reference: EN 12834 [1] clause 6.3.7
	PICS Selection: Table A.1/1 AND Table A.6/8 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BI_05
	Initial condition: OBU already initialized for test application, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SERVICE.request (not applicable at IUT) concatenated with SERVICE.request (applicable at IUT) with FlowControl = 7. 2. Verify IUT correctly replies with SERVICE.response (ReturnStatus with a status other than noError, accessDenied or chainingError) concatenated with SERVICE.response (ReturnStatus(noError)).
NOTE: SERVICE shall be out of SET, GET, ACTION, as declared by the applicant.	

TP/AL-T/OBU/BI/06	**Verify that the OBU can receive and manage concatenated and chained APDUs from a single application with chaining error**
	Reference: EN 12834 [1] clause 6.3.8
	PICS Selection: Table A.1/1 AND Table A.6/9 AND ((Table E.2/11 AND Table E.3/9) OR (Table E.2/12 AND Table E.3/10) OR (Table E.2/13 AND Table E.3/11))
	TC reference: TC_AL_T_OBU_BI_06
	Initial condition: OBU already initialized for test application, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends SERVICE.request (not applicable at IUT) concatenated and chained with SERVICE.request (applicable at IUT) with FlowControl = 7. 2. Verify IUT correctly replies with SERVICE.response (ReturnStatus with a status other than noError, accessDenied or chainingError) concatenated with SERVICE.response (ReturnStatus(chainingError)).
NOTE: SERVICE shall be out of SET, GET, ACTION, as declared by the applicant.	

5.3 Application T-kernel test purposes for Road Side Unit

5.3.1 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.

Test purposes:

TP/AL-T/RSU/BV/01	**Verify that the RSU can receive and manage non-fragmented APDUs with random PDU number**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_T_RSU_BV_01
	Initial condition: RSU ready for normal operation sending BST on request.
	Stimulus and Expected Behaviour: 1. Tester receives valid BST. 2. Tester sends valid VST with random PDU number. 3. Verify IUT acknowledges VST with privately addressed request. 4. Repeat steps 1 through 3 until all allowed values of the PDU number field are tested.

5.3.2 BI test purposes

Test subgroup objective:

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

Test purposes:

TP/AL-T/RSU/BI/01	**Verify that the RSU can manage PDUs addressed to the Broadcast Kernel in case the RSU only supports the Initialization Kernel and the Transport Kernel**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table B.1/1 AND NOT Table B.1/3
	TC reference: TC_AL_T_RSU_BI_01
	Initial condition: RSU is running a single test application, sending on request BST with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester sends INITIALIZATION.response with the PDU number set to 0. 3. Verify IUT does not accept the response by sending any further privately addressed frame to this OBU. 4. Repeat steps 1 through 3 with the PDU number set to 1 in step 2.

TP/AL-T/RSU/BI/02	**Verify that the RSU can manage PDUs addressed to the Broadcast Kernel in case the RSU only supports the Initialization Kernel and the Transport Kernel**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table B.1/1 AND NOT Table B.1/3 AND ((Table F.2/11 AND Table F.3/9) OR (Table F.2/12 AND Table F.3/10) OR (Table F.2/13 AND Table F.3/11))
	TC reference: TC_AL_T_RSU_BI_02
	Initial condition: RSU is running a single test application, awaiting a L7 SERVICE.response TSPX_APDU_7a_EIDa_rsp upon requested command. Proper reception of the SERVICE.response will cause transmission of the next L7 SERVICE.request TSPX_APDU_7b_EIDa_req. Alternatively the original request will be repeated by the RSU layer 7 after the next BST sent with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives SERVICE.request. 2. Tester sends SERVICE.response with the PDU number set to 0. 3. Verify IUT does not accept the response by sending the next SERVICE.request to this OBU. 4. Repeat steps 1 through 3 with the PDU number set to 1 in step 2.
NOTE: SERVICE shall be out of GET, SET, ACTION, as declared by the applicant.	

TP/AL-T/RSU/BI/03	**Verify that the RSU can receive and manage non-fragmented PDUs with wrong fragment counter value**
	Reference: EN 12834 [1] clause 6.3.3
	PICS Selection: Table B.1/1 AND ((Table F.2/11 AND Table F.3/9) OR (Table F.2/12 AND Table F.3/10) OR (Table F.2/13 AND Table F.3/11))
	TC reference: TC_AL_T_RSU_BI_03
	Initial condition: RSU is running a single test application. RSU is awaiting a non-fragmented SERVICE.response from the tester upon request. Upon reception of the response, RSU will send next non-fragmented SERVICE.request. Alternatively the original request will be repeated by the RSU layer 7 after the next BST with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives SERVICE.request. 2. Tester sends SERVICE.response with the fragment counter set to 1. 3. Verify IUT does not accept the response by sending the next SERVICE.request to this OBU. 4. Repeat steps 1 through 3 for all missing possible wrong values of the fragment counter, except for the correct value 0.
NOTE: SERVICE shall be out of GET, SET, ACTION, as declared by the applicant.	

5.4 Application I-kernel test purposes for On Board Unit (OBU)

5.4.1 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.

Test purposes:

TP/AL-I/OBU/BV/01	**Verify that the OBU can receive and manage INITIALIZATION.request (BST)**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BV_01
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 with proper setting of all BST parameters such, that Initialization of the IUT is expected. 2. Verify IUT responds with INITIALIZATION.response (VST). 3. Tester immediately sends any further private command to this IUT. 4. Tester immediately sends the next BST. 5. Verify IUT does not request a private uplink window.

TP/AL-I/OBU/BV/02	**Verify that the OBU can receive and manage EVENT-REPORT.request (RELEASE) with mode = 0**
	Reference: EN 12834 [1] clause 6.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BV_02
	Initial condition: OBU already initialized, waiting to be served by tester.
	Stimulus and Expected Behaviour: 1. Tester sends EVENT-REPORT.request (RELEASE) with mode = 0 and FlowControl = 1. 2. Tester immediately sends empty ECHO command to this IUT. 3. Verify IUT no more responds to the tester.

TP/AL-I/OBU/BV/03	**Verify that the OBU can read and manage the BeaconID contained in the BST**
	Reference: EN 12834 [1] clause 7.3.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BV_03
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2 and BeaconID.manufacturerid = manufacturerID1 and BeaconID.individualid = individualID1, and with proper setting of all other BST parameters such, that Initialization of the IUT is expected. 2. Verify IUT initializes with INITIALIZATION.response (VST). 3. Tester finalizes initialization by sending any further privately addressed frame to the IUT. 4. Verify that IUT responds correctly. 5. Tester sends INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2 and BeaconID.manufacturerid = manufacturerID2 and BeaconID.individualid = individualID1. 6. Verify IUT initializes with INITIALIZATION.response (VST) and new private LID. 7. Tester finalizes initialization by sending any further privately addressed frame to the IUT. 8. Tester sends INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2 and BeaconID.manufacturerid = manufacturerID2 and BeaconID.individualid = individualID2. 9. Verify IUT initializes with INITIALIZATION.response (VST) and new private LID.

TP/AL-I/OBU/BV/04	**Verify that the OBU can read and manage time of reception of BST contained it the parameter Time of the BST**
	Reference: EN 12834 [1] clause 7.3.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BV_04
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2 and Time = Tref such, that Initialization of the IUT is expected. 2. Verify IUT initializes with INITIALIZATION.response (VST). 3. Tester finalizes initialization by sending any further privately addressed frame to the IUT. 4. Verify that IUT responds properly. 5. Tester sends INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2 and Time = Tref + 256 s. 6. Verify IUT initializes with INITIALIZATION.response (VST). 7. Tester finalizes initialization by sending any further privately addressed frame to the IUT. 8. Verify that IUT responds properly.

TP/AL-I/OBU/BV/05	**Verify that the OBU can manage profile selection**
	Reference: EN 12834 [1] clause 7.3.2 and annex A EN 12253 [2] clause 5.3
	PICS Selection: Table A.1/1 AND NOT Table F.1/1
	TC reference: TC_AL_I_OBU_BV_05
	Initial condition: OBU not in sleep mode and not yet initialized. Profiles #A and #B shall be supported in the OBU. Profiles #C and #D shall not be supported in the OBU.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1and BST.profile = #A and BST.profileList being empty. 2. Verify IUT initializes with INITIALIZATION.response (VST) using profile #A. 3. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #B and BST.profileList being empty. 4. Verify IUT initializes with INITIALIZATION.response (VST) using profile #B. 5. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = #C and BST.profileList containing the value #A. 6. Verify IUT initializes with INITIALIZATION.response (VST) using profile #A. 7. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #C and BST.profileList containing the value #B. 8. Verify IUT initializes with INITIALIZATION.response (VST) using profile #B. 9. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = #A and BST.profileList containing the value #C. 10. Verify IUT initializes with INITIALIZATION.response (VST) using profile #A. 11. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #B and BST.profileList containing the value #C. 12. Verify IUT initializes with INITIALIZATION.response (VST) using profile #B. 13. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = #C and BST.profileList containing the values #D in the first entry and #A in the second entry. 14. Verify IUT initializes with INITIALIZATION.response (VST) using profile #A. 15. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #C and BST.profileList containing the values #D in the first entry and #B in the second entry. 16. Verify IUT initializes with INITIALIZATION.response (VST) using profile #B.

TP/AL-I/OBU/BV/06	**Verify that the OBU can manage profile selection**
	Reference: EN 12834 [1] clause 7.3.2 and annex A EN 13372 [3] clause 8 EN 12253 [2] clause 5.3
	PICS Selection: Table A.1/1 AND Table F.1/1
	TC reference: TC_AL_I_OBU_BV_06
	Initial condition: OBU not in sleep mode and not yet initialized. Profiles 0 and 1 shall be supported in the OBU. Profiles #C and #D shall not be supported in the OBU.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = 0 and BST.profileList being empty. 2. Verify IUT initializes with INITIALIZATION.response (VST) using profile 0. 3. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = 1 and BST.profileList being empty. 4. Verify IUT initializes with INITIALIZATION.response (VST) using profile 1. 5. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = #C and BST.profileList containing the value 0. 6. Observe whether IUT initializes with INITIALIZATION.response (VST) using profile 0. This is not required! 7. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #C and BST.profileList containing the value 1. 8. Observe whether IUT initializes with INITIALIZATION.response (VST) using profile 1. This is not required! 9. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = 0 and BST.profileList containing the value #C. 10. Verify IUT initializes with INITIALIZATION.response (VST) using profile 0. 11. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = 1 and BST.profileList containing the value #C. 12. Verify IUT initializes with INITIALIZATION.response (VST) using profile 1. 13. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.profile = #C and BST.profileList containing the values #D in the first entry and 0 in the second entry. 14. Observe whether IUT initializes with INITIALIZATION.response (VST) using profile 0. This is not required! 15. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.profile = #C and BST.profileList containing the values #D in the first entry and 1 in the second entry. 16. Observe whether IUT initializes with INITIALIZATION.response (VST) using profile 1. This is not required!

TP/AL-I/OBU/BV/07	**Verify that the OBU can manage applications**
	Reference: EN 12834 [1] clause 7.3.2 and annex A
	PICS Selection: Table A.1/1 AND Table A.4/7
	TC reference: TC_AL_I_OBU_BV_07
	Initial condition: OBU not in sleep mode and not yet initialized. The application type aid = #A shall be supported by the OBU, and the application type aid = #B shall not be supported in the OBU.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.mandApplications.aid = #A and BST.nonmandApplications being empty. 2. Verify IUT initializes with INITIALIZATION.response (VST) offering details of the supported application in VST.applications.ApplicationContextMark. 3. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID2 and BST.mandApplications.aid = #A and BST.nonmandApplications = #B. 4. Verify IUT initializes with INITIALIZATION.response (VST) offering details of the supported application in VST.applications.ApplicationContextMark. 5. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BeaconID1 and BST.mandApplications.aid = #B and BST.nonmandApplications.aid = #A. 6. Verify IUT initializes with INITIALIZATION.response (VST) offering details of the supported application in VST.applications.ApplicationContextMark.

TP/AL-I/OBU/BV/08	**Verify that the OBU randomly selects new private LIDs**
	Reference: EN 12834 [1] 7.3.2
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BV_08
	Initial condition: OBU not in sleep mode and not yet initialized.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2. 2. Verify IUT initializes with INITIALIZATION.response (VST). Note private LID. 3. Tester records private LID selected and does not finalize initialization. 4. Tester sends INITIALIZATION.request (BST) with FlowControl = 2. 5. Verify IUT initializes with INITIALIZATION.response (VST). Note private LID. 6. Tester records private LID selected and does not finalize initialization. 7. Repeat steps 1 Through 6 X times with X = 5 000. 8. Verify IUT selects private LIDs on a random basis with approximately equal distribution. Check mean value against 134 217 728,5 and standard deviation against 77 490 641,1. The measured mean value shall not deviate more than 2 % from the expected value. The measured standard deviation shall not deviate more than 2 % from the expected value.

5.4.2 BI test purposes

Test subgroup objective:

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

Test purposes:

TP/AL-I/OBU/BI/01	**Verify that the OBU can manage profile selection**
	Reference: EN 12834 [1] clause 7.3.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BI_01
	Initial condition: OBU not in sleep mode and not yet initialized. The profiles #C and #D shall not be supported in the OBU.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BST.profile = #C and BST.profileList being empty. 2. Verify IUT does not initialize with INITIALIZATION.response (VST). 3. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BST.profile = #D and BST.profileList being empty. 4. Verify IUT does not initialize with INITIALIZATION.response (VST).

TP/AL-I/OBU/BI/02	**Verify that the OBU can manage applications**
	Reference: EN 12834 [1] clause 7.3.2 and annex A
	PICS Selection: Table A.1/1
	TC reference: TC_AL_I_OBU_BI_02
	Initial condition: OBU not in sleep mode and not yet initialized. The applications aid = #A and aid = #B shall not be supported in the OBU.
	Stimulus and Expected Behaviour: 1. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BST.mandApplications.aid = #A and BST.nonmandApplications being empty. 2. Verify IUT does not initialize with INITIALIZATION.response (VST). 3. Tester sends INITIALIZATION.request (BST) with FlowControl = 2 and BST.mandApplications.aid = #B and BST.nonmandApplications.aid = #A. 4. Verify IUT does not initialize with INITIALIZATION.response (VST).

5.5 Application I-kernel test purposes for Road Side Unit

5.5.1 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.

Test purposes:

TP/AL-I/RSU/BV/01	**Verify that the RSU can read and manage profile contained in the VST**
	Reference: EN 12834 [1] clauses 6.2, 7.3.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BV_01
	Initial condition: RSU is running a single test application, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast, changing BST.profile in every next BST, offering at least the two profiles 0 and 1.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request with BST.profile set to the first value. The BST.ProfileList may exist. 2. Tester is responding with INITIALIZATION.response (VST), with profile offered by RSU, using the correct ApplicationList. 3. Verify IUT acknowledges initialization of OBU by sending any privately addressed command different to RELEASE. 4. Repeat steps 1 through 3 for the next profile with new private LID.

TP/AL-I/RSU/BV/02	**Verify that the RSU can read applications contained in the VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BV_02
	Initial condition: RSU is running a single test application, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with ApplicationList containing a single entry: aid = valid, eid = valid, parameter = valid. 3. Verify IUT acknowledges initialization of OBU by sending any privately addressed command different to RELEASE.
NOTE: The term "valid" means, that the value is supported at the RSU.	

TP/AL-I/RSU/BV/03	**Verify that the RSU can read and manage EIDs of applications contained in the VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BV_03
	Initial condition: RSU is running a single test application, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast, offering a single type of application and supporting a single context of this application.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), requiring the offered application context with EID = 1. 3. Verify IUT does acknowledge initialization of OBU by sending any privately addressed command different to RELEASE. 4. Repeat steps 1 and 2 for all values of EID in the range from 2 to 127, each time with new private LID.

TP/AL-I/RSU/BV/04	**Verify that the RSU can read and manage multiple applications in VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1, B.2/4
	TC reference: TC_AL_I_RSU_BV_02
	Initial condition: RSU is running two test applications, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with new private LID and with ApplicationList containing a two entries: 1) entry: aid = valid, eid = valid, parameter: Context = valid. 2) entry: aid = valid, eid = other valid, parameter: Context = other valid. 3. Verify IUT acknowledges initialization of OBU by accessing one of the applications identified in step 2 above.
NOTE: The term "valid" means, that the value is supported at the RSU.	

5.5.2 BI test purposes

Test subgroup objective:

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

Test purposes:

TP/AL-I/RSU/BI/01	**Verify that the RSU can read and manage the ApplicationList contained in the VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BI_01
	Initial condition: RSU is running test application, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with ApplicationList containing a single entry: aid = invalid, parameter Context = valid. 3. Verify IUT does not acknowledge initialization of OBU by sending a privately addressed frame to it other than the RELEASE command. 4. Observe, whether IUT sends allowed EVENT-REPORT.request (RELEASE).
NOTE: The term "valid" means, that the value is supported at the RSU. The term "invalid" means that the value is not supported at the RSU.	

TP/AL-I/RSU/BI/02	**Verify that the RSU can read and manage wrong EID = 0 of non-system applications contained in the VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BI_02
	Initial condition: RSU is running a single test application, not a system application, transmitting on request INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with ApplicationList containing a single entry: aid = valid and not equal to aid = 0, parameter = valid, EID = 0. 3. Verify IUT does not acknowledge initialization of OBU by sending a privately addressed frame to it other than the RELEASE command.

TP/AL-I/RSU/BI/03	**Verify that the RSU can read and manage wrong profile contained in the VST**
	Reference: EN 12834 [1] clauses 6.2, 7.3.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BI_03
	Initial condition: RSU is running a single test application, transmitting on request INITIALIZATION.request (BST) with mode = 1 and FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with profile not supported by RSU. 3. Verify IUT does not acknowledge initialization of OBU by sending a privately addressed frame to it other than the RELEASE command.

TP/AL-I/RSU/BI/04	**Verify that the RSU can read and manage the ApplicationList contained in the VST**
	Reference: EN 12834 [1] clauses 6.2 and 7.3.3
	PICS Selection: Table B.1/1
	TC reference: TC_AL_I_RSU_BI_01
	Initial condition: RSU is running test application, transmitting on request INITIALIZATION.request (BST) with FlowControl = 2, LID = broadcast.
	Stimulus and Expected Behaviour: 1. Tester receives INITIALIZATION.request. 2. Tester is responding with INITIALIZATION.response (VST), with ApplicationList containing a two entries: 1) entry: aid = invalid, eid = valid, parameter: Context = valid. 2) entry: aid = valid, eid = other valid, parameter: Context = valid. 3. Verify IUT acknowledges initialization of OBU by performing the application as indicated in the second entry of the previous step.
NOTE: The term "valid" means that the value is supported at the RSU. The term "invalid" means that the value is not supported at the RSU.	

Annex A (informative): Bibliography

CEN EN 12795 (2003): "Road transport and traffic telematics - Dedicated Short Range Communication (DSRC) - DSRC data link layer: medium access and logical link control".

History

Document history		
V1.1.1	August 2006	Publication