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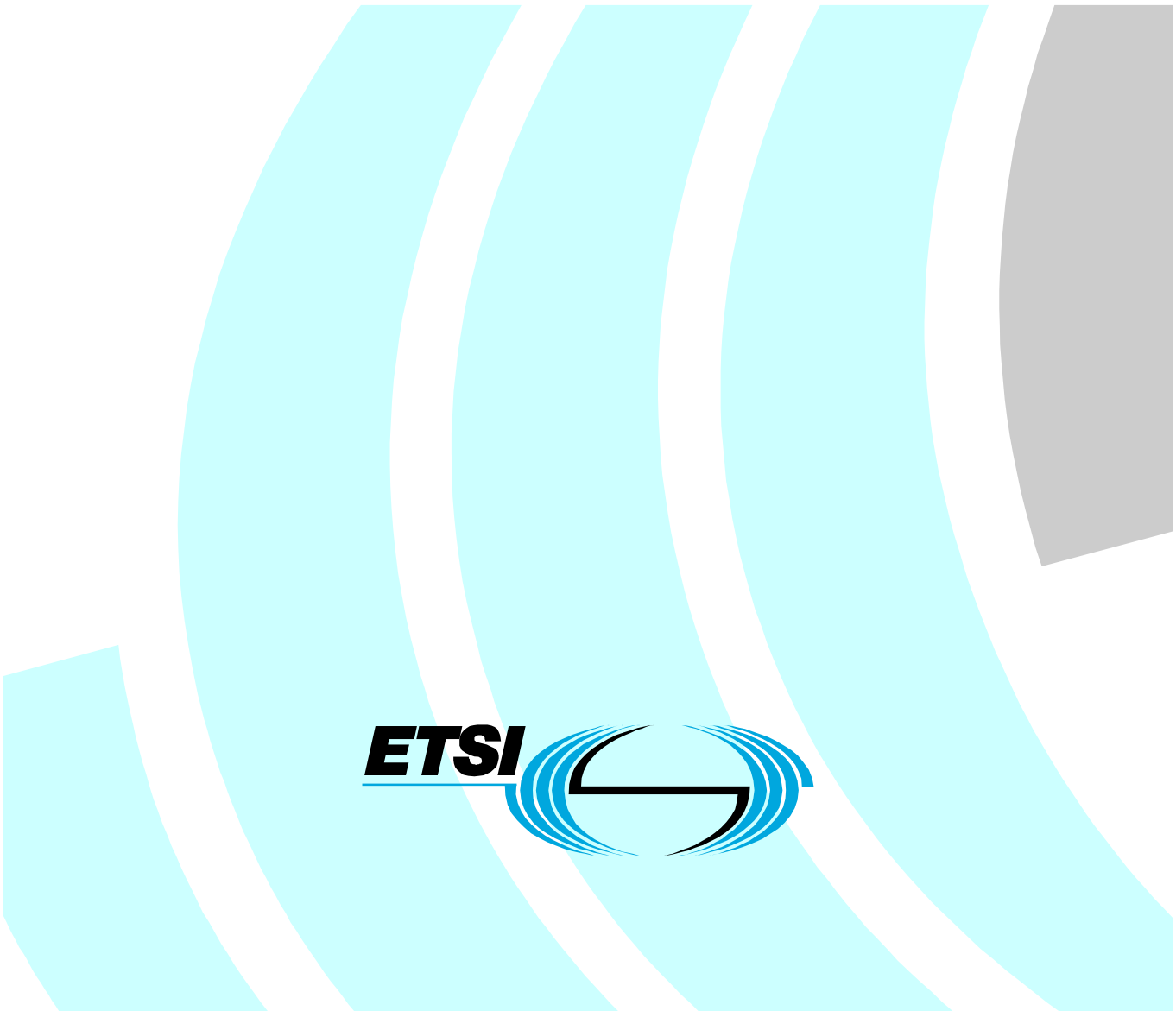
Technical Specification

Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Test specifications for Dedicated Short Range Communication (DSRC) transmission equipment; Part 1: DSRC data link layer: medium access and logical link control; Sub-Part 1: Protocol Implementation Conformance Statement (PICS) proforma specification



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Keywords
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Contents

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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 1, sub-part 1 of a multi-part deliverable covering the test specifications for CEN DSRC, as identified below:

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

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";

Part 2: "DSRC application layer".

1 Scope

The present document specifies partial Protocol Implementation Conformance Statement (PICS) proformas for the MAC and LLC layers of CEN DSRC as defined in EN 12795 [1], in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [4] and ETS 300 406 [5].

This proforma is intended for use by suppliers of equipment which is claimed to conform to the CEN DSRC data link layer, as specified in EN 12795 [1].

The present document also contains profile Implementation Conformance Statement (ICS) proformas and profile Requirements Lists for the MAC and LLC layers for use by suppliers of equipment which is claimed to conform to EN 13372 [2], DSRC Profiles for RTTT applications.

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called an Implementation Conformance Statement (ICS). The present document provides proforma ICS templates, to be filled in by equipment suppliers.

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

[2] CEN EN 13372 (2004): "Road Transport and Traffic Telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT applications".

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

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

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

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 12795 [1], EN 13372 [2], ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [4] and the following apply:

Implementation Conformance Statement (ICS): statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

ICS proforma: document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in EN 12795 [1], EN 13372 [2], ISO/IEC 9646-1 [3], ISO/IEC 9646-7 [4] and the following apply:

DSRC	Dedicated Short Range Communication
FCS	Frame Check Sequence
ICS	Implementation Conformance Statement
IUT	Implementation Under Test
LLC	Logical Link Control
MAC	Medium Access Control
OBU	On Board Unit, an alternative descriptor to Mobile Equipment
PICS	Protocol Implementation Conformance Statement
RL	Requirements List
RSU	Road Side Unit, an alternative descriptor to Fixed Equipment
RTTT	Road Transport and Traffic Telematics
SUT	System Under Test

4 Overview of the templates

The present document contains separate PICS templates for On Board Unit (OBU) and Road Side Unit (RSU), for each of MAC and LLC layers.

In addition, the present document contains profile Requirements Lists (RL) and profile-specific ICS proformas for equipment claimed to conform to EN 13372 [2]. Again, these exist for the OBU and for the RSU, for each of MAC and LLC layers.

5 Conformance requirement concerning PICS

If it claims to conform to the present document, the actual PICS proforma to be filled in by a supplier shall be technically equivalent to the text of the PICS proforma given in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

An ICS which conforms to the present document shall be a conforming PICS proforma completed in accordance with the instructions for completion given at the start of each annex.

Annex A (normative): PICS proforma for DSRC data link layer for OBU

A.1 Guidance for completing the PICS proforma

A.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 12795 [1] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- PICS proforma tables:
  - Services and Service Access Points;
  - MAC Data Service;
  - LLC Data Service.

A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies a unique group of related optional items and the logic of their selection which is defined immediately following the table.
ci	conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to EN 12795 [1], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y	supported by the implementation.
N or n	not supported by the implementation.
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

NOTE: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2 ,4 ,6 ,8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 1: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 2: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

A.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause A.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

A.2.1 Date of the statement

.....

A.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

A.2.3 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

A.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

A.2.6 PICS contact person

(A person to contact if there are any queries concerning the content of the PICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

A.3 Identification of the protocol

This PICS proforma applies to the following standard:

EN 12795 [1]: "Road transport and traffic telematics - Dedicated Short Range Communication (DSRC) - DSRC data link layer: medium access and logical link control". This PICS proforma applies only for On-Board Units.

A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

A.5 Services and Service Access Points

A.5.1 Services

Table A.1: Services

Item	Service implemented	Reference	Status	Support
1	MAC Data Service	7	m	
2	LLC Data Service	8.1	m	

A.5.2 Communication Direction

Table A.2: Communication Direction

Item	Service implemented	Reference	Status	Support
1	Downlink from RSU to OBU	6, 7.1	m	
2	Uplink from OBU to RSU	6, 7.1	o	

A.5.2 Service Access Points

Table A.3: SAPs

Item	SAP implemented	Reference	Status	Support
1	Broadcast SAP	6	m	
2	Private SAP	6	c1	
3	Multicast SAP	6	o	

c1 IF Table A.2/2 -- uplink implemented THEN m ELSE n/a.

A.6 MAC Data Service

A.6.1 MAC Frame format

Table A.4: MAC Frame format

Item	Capability	Reference	Status	Support
1	Frame format	5	m	
2	Flags	5.1	m	
3	Private LID Link Address Field	5.2.1	c2	
4	Broadcast LID Link Address Field	5.2.2	m	
5	Multicast LID Link Address Field	5.2.3	c3	
6	MAC Control field reception	7.3.2.1	m	
7	MAC Control field transmission	7.3.2.2	c2	
8	16 bit FCS	5.5	m	
9	Bit order	5.6	m	

c2 If Table A.2/2 -- uplink implemented THEN m else n/a.

c3 If Table A.3/3 -- multicast SAP THEN m else n/a.

A.6.2 MAC window size and timing

Table A.5: MAC window management

Item	Procedure	Reference	Status	Support
1	Random Public uplink window selection	7.3.4.3	c4	
2	Private uplink windows transmission	7.3.4.1	c4	
3	Public uplink windows transmission	7.3.4.2	c4	
4	Downlink windows reception	7.3.3	m	

c4 IF Table A.2/2 -- uplink implemented THEN m else n/a.

Table A.6: MAC Timers and Counters

Item	Timer or Counter implemented	Value	Reference	Status	Support
1	T1: Minimum uplink to downlink turn around time	32 µs	Annex A	c5	
2	T2: Minimum downlink to downlink turn around time	0 µs	Annex A	m	
3	T3: downlink to uplink turn around time	160 µs	Annex A	c5	
4	T4a: maximum time to start of transmission in private uplink window	320 µs	Annex A	c5	
5	T4b: maximum time to start of transmission in public uplink window	32 µs	Annex A	c5	
6	T5: time duration of public uplink window	448 µs	Annex A	c5	
7	N2: maximum number of octets in frame in downlink window	128	Annex A	m	
8	N3. maximum number of octets in frame in private uplink window	128	Annex A	c5	
9	N4: maximum number of octets in frame in public uplink window	9	Annex A	c5	
10	N5: number of simultaneously allocated public uplink windows	3	Annex A	c5	

c5 IF Table A.2/2 -- uplink implemented THEN m else n/a.

A.6.3 Protocol procedures

Table A.7: MAC protocol procedures

Item	Procedure	Reference	Status	Support
1	Frame reception – Validity of frame	7.4.3.1.1	m	
2	Management of received S-Bit	7.4.3.1.3	m	
3	Public uplink window allocation	7.4.3.1.4	c6	
4	Frame transmission	7.4.3.2.1	c6	
5	Private uplink window request	7.4.3.2.2, 7.4.1	c6	
6	Frame check sequence	5.5	m	
7	Bit stuffing	5.7	m	

c6 IF Table A.2/2 -- uplink implemented THEN m else n/a.

A.7 LLC Data Service

A.7.1 LLC Service Modes

Table A.8: LLC Service Modes

Item	Service mode implemented	Reference	Status	Support
1	LLC Unacknowledged connectionless mode	8.1	m	
2	LLC Acknowledged connectionless mode	8.1	c7	

c7 IF A.3/2 -- private SAP implemented THEN o ELSE n/a.

A.7.2 LLC Control and Status Field

Table A.9: LLC Control and Status fields

Item	Format of field implemented	Reference	Status	Support
1	LLC Control field	8.3.2	m	
2	LLC Status subfield	8.3.3	c8	

c8 IF A.8/2 -- Acknowledged connectionless mode THEN m ELSE n/a.

A.7.3 LLC Unacknowledged Services

A.7.3.1 Protocol procedures

Table A.10: UI protocol procedures

Item	Procedure	Reference	Status	Support
1	UI commands transmission	8.4.2	c9	
2	UI commands reception	8.4.2	m	

c9: IF A.2/2 -- uplink implemented THEN m ELSE n/a.

A.7.3.2 PDUs

Table A.11: Unacknowledged connectionless PDU

Item	PDU	Value	Sending			Receiving		
			Reference	Status	Support	Reference	Status	Support
1	UI Command, P-Bit cleared	"03"H	8.4.2.1	c10		8.4.2.2	m	
2	UI Command, P-Bit set	"13"H	8.4.2.1	x		8.4.2.1	x	

c10: IF A.2/2 -- uplink implemented THEN m ELSE x.

A.7.4 LLC Acknowledged Services

Precondition: A.8/2 -- Acknowledged connectionless mode implemented.

A.7.4.1 Protocol procedures

Table A.12: ACn protocol procedures

Item	Procedure	Reference	Status	Support
1	ACn commands transmission	8.4.3.3	x	
2	ACn commands reception	8.4.3.4	m	
3	ACn response transmission	8.4.3.5	m	
4	ACn response reception	8.4.3.6	n/a	
5	ACn State variables	8.4.3.1	m	
6	Use of P/F-bit	8.4.3.2	m	

A.7.4.2 PDUs

Table A.13: ACn command functionality

Item	Parameter	Reference	Status	Support
1	Data Link Echo	8.4.3.2	o.1	
2	Transmitting Data	8.4.3.2	o.1	
3	Exchanging Data	8.4.3.2	o.1	

o..1: It is mandatory to support at least one of these items.

Table A.14: Acknowledged connectionless PDUs

Item	PDU	Value	Sending			Receiving		
			Reference	Status	Support	Reference	Status	Support
1	AC0 command, P-Bit cleared	"67"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c11	
2	AC0 command, P-Bit set	"77"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c12	
3	AC1 command, P-Bit cleared	"E7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c11	
4	AC1 command, P-Bit set	"F7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c12	
5	AC0 response, F-Bit cleared	"67"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c11		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
6	AC0 response, F-Bit set	"77"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c12		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
7	AC1 response, F-Bit cleared	"E7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c11		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
8	AC1 response, F-Bit set	"F7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c12		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	

c11: IF A.13/1 OR A.13/2 -- DLEcho or transmitting data implemented THEN m ELSE n/a.

c12: IF A.13/3 -- exchanging data implemented THEN m ELSE n/a.

Table A.15: LLC Status subfield values

Item	LLC status subfield purpose	Value	Reference	Status	Support
1	Command received, Response LPDU present	"00"H	8.3.3	c13	
2	Command received, Response LPDU not yet available	"30"H	8.3.3	c13	
3	Command received, Response LPDU not requested	"40"H	8.3.3	c13	

c13: IF A.8/2 -- Acknowledged connectionless mode THEN m ELSE n/a.

Annex B (normative): PICS proforma for DSRC data link layer for RSU

B.1 Guidance for completing the PICS proforma

B.1.1 Purposes and structure

The purpose of this PICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 12795 [1] may provide information about the implementation in a standardized manner.

The PICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- PICS proforma tables:
  - Services and Service Access Points;
  - MAC Data Service;
  - LLC Data Service.

B.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.
ci	conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to EN 12795 [1], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y	supported by the implementation.
N or n	not supported by the implementation.
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

NOTE: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2, 4, 6, 8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the PICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 1: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 2: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

B.1.3 Instructions for completing the PICS proforma

The supplier of the implementation shall complete the PICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause B.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

B.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the PICS should be named as the contact person.

B.2.1 Date of the statement

.....

B.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

B.2.3 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

B.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

B.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

B.2.6 PICS contact person

(A person to contact if there are any queries concerning the content of the PICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

B.3 Identification of the protocol

This PICS proforma applies to the following standard:

EN 12795 [1]: "Road transport and traffic telematics - Dedicated Short Range Communication (DSRC) - DSRC data link layer: medium access and logical link control". This PICS proforma applies only for Road-Side Units.

B.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the PICS, with an explanation of why the implementation is non-conforming, on pages attached to the PICS proforma.

B.5 Global Roles

B.5.1 Services

Table B.1: Services

Item	Service implemented	Reference	Status	Support
1	MAC Data Service	7	m	
2	LLC Data Service	8.1	m	

B.5.2 Communication Direction

Table B.2: Communication Direction

Item	Service implemented	Reference	Status	Support
1	Downlink from RSU to OBU	6, 7.1	m	
2	Uplink from OBU to RSU	6, 7.1	o	

B.5.3 Service Access Points

Table B.3: SAPs

Item	SAP implemented	Reference	Status	Support
1	Broadcast SAP	6	m	
2	Private SAP	6	c1	
3	Multicast SAP	6	o	

c1 IF Table B.2/2 -- uplink implemented THEN m ELSE n/a.

B.6 MAC Data Services

B.6.1 MAC Frame format

Table B.4: MAC Frame format

Item	Capability	Reference	Status	Support
1	Frame format	5	m	
2	Flags	5.1	m	
3	Private LID Link Address Field	5.2.1	c2	
4	Broadcast LID Link Address Field	5.2.2	m	
5	Multicast LID Link Address Field	5.2.3	c3	
6	MAC Control field transmission	7.3.2.1	m	
7	MAC Control field reception	7.3.2.2	c2	
8	16 bit FCS	5.5	m	
9	Bit order	5.6	m	

c2 IF Table B.2/2 -- uplink implemented THEN m else n/a.

c3 IF Table B.3/3 -- Multicast SAP implemented THEN m else n/a.

B.6.2 MAC window size and timing

Table B.5: MAC window management

Item	Procedure	Reference	Status	Support
1	Downlink windows transmission	7.3.3	m	
2	Private uplink windows reception	7.3.4.1	c4	
3	Public uplink windows reception	7.3.4.2	c4	

c4 IF Table B.2/2 -- uplink implemented THEN m else n/a.

Table B.6: MAC Timers and Counters

Item	Timer or Counter implemented	Value	Reference	Status	Support
1	T1: Minimum uplink to downlink turn around time	32 µs	Annex A	c5	
2	T2: Minimum downlink to downlink turn around time	0 µs	Annex A	m	
3	T3: downlink to uplink turn around time	160 µs	Annex A	c5	
4	T4a: maximum time to start of transmission in private uplink window	320 µs	Annex A	c5	
5	T4b: maximum time to start of transmission in public uplink window	32 µs	Annex A	c5	
6	T5: time duration of public uplink window	448 µs	Annex A	c5	
7	N2: maximum number of octets in frame in downlink window	128	Annex A	m	
8	N3. maximum number of octets in frame in private uplink window	128	Annex A	c5	
9	N4: maximum number of octets in frame in public uplink window	9	Annex A	c5	
10	N5: number of simultaneously allocated public uplink windows	3	Annex A	c5	

c5 IF Table B.2/2 -- uplink implemented THEN m else n/a.

B.6.3 Protocol procedures

Table B.7: MAC protocol procedures

Item	Procedure	Reference	Status	Support
1	Frame reception – validity of frame	7.4.2.1.1	c6	
2	Management of received L-Bit	7.4.2.1.2	c6	
3	Frame transmission	7.4.2.2.1	m	
4	Private uplink window allocation	7.4.2.1.3, 7.4.2.2.2	c6	
5	Private uplink window re-allocation	7.4.2.2.3	c6	
6	Public uplink window allocation	7.4.2.2.4	c6	
7	Frame check sequence	5.5	m	
8	Bit stuffing	5.7	m	

c6 IF Table B.2/2 -- uplink implemented THEN m else n/a.

B.7 LLC Data Service

B.7.1 LLC Service Modes

Table B.8: LLC Service Modes

Item	Service mode implemented	Reference	Status	Support
1	LLC Unacknowledged connectionless mode	8.1	m	
2	LLC Acknowledged connectionless mode	8.1	c7	

c7: IF B.3/2 -- private SAP implemented THEN o ELSE n/a.

B.7.2 LLC Control and Status Field

Table B.9: LLC Control and Status fields

Item	Format of field implemented	Reference	Status	Support
1	LLC Control field	8.3.2	m	
2	LLC Status subfield	8.3.3	c8	

c8: IF B.8/2 -- Acknowledged connectionless mode THEN m ELSE n/a.

B.7.3 LLC Unacknowledged Services

B.7.3.1 Protocol procedures

Table B.10: UI protocol procedures

Item	Procedure	Reference	Status	Support
1	UI commands transmission	8.4.2	m	
2	UI commands reception	8.4.2	c9	

c9 Table B.2/2 -- uplink implemented THEN m ELSE n/a.

B.7.3.2 PDUs

Table B.11: Unacknowledged connectionless PDU

Item	PDU	Value	Sending			Receiving		
			Reference	Status	Support	Reference	Status	Support
1	UI Command, P-Bit cleared	"03"H	8.4.2.1	m		8.4.2.2	c10	
2	UI Command, P-Bit set	"13"H	8.4.2.1	x		8.4.2.1	x	

c10: IF B.2/2 -- uplink implemented THEN m ELSE n/a.

B.7.4 LLC Acknowledged Services

Precondition: B.8/2 -- Acknowledged connectionless mode implemented.

B.7.4.1 Protocol procedures

Table B.12: ACn protocol procedures

Item	Procedure	Reference	Status	Support
1	ACn commands transmission	8.4.3.3	m	
2	ACn commands reception	8.4.3.4	n/a	
3	ACn response transmission	8.4.3.5	x	
4	ACn response reception	8.4.3.6	m	
5	ACn State variables	8.4.3.1	m	
6	Use of P/F bit	8.4.3.2	m	

B.7.5 PDUs

Table B.13: ACn command functionality

Item	Parameter	Reference	Status	Support
1	Data Link Echo	8.4.3.2	o.1	
2	Transmitting Data	8.4.3.2	o.1	
3	Exchanging Data	8.4.3.2	o.1	

o..1: It is mandatory to support at least one of these items.

Table B.14: Acknowledged connectionless PDUs

Item	PDU	Value	Sending			Receiving		
			Reference	Status	Support	Reference	Status	Support
1	AC0 command, P-Bit cleared	"67"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c11		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
2	AC0 command, P-Bit set	"77"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c12		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
3	AC1 command, P-Bit cleared	"E7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c11		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
4	AC1 command, P-Bit set	"F7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	c12		8.4.1, 8.4.3, 8.2.2, 8.2.3	n/a	
5	AC0 response, F-Bit cleared	"67"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c11	
6	AC0 response, F-Bit set	"77"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c12	
7	AC1 response, F-Bit cleared	"E7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c11	
8	AC1 response, F-Bit set	"F7"H	8.4.1, 8.4.3, 8.2.2, 8.2.3	x		8.4.1, 8.4.3, 8.2.2, 8.2.3	c12	

c11: IF 13/1 OR 13/2 -- DLEcho or transmitting data implemented THEN m ELSE n/a.

c12: IF 13/3 -- exchanging data implemented THEN m ELSE n/a.

Table B.15: LLC Status subfield values

Item	LLC status subfield purpose	Value	Reference	Status	Support
1	Command received, Response LPDU present	"00"H	8.3.3	c13	
2	Command received, Response LPDU not yet available	"30"H	8.3.3	c13	
3	Command received, Response LPDU not requested	"40"H	8.3.3	c13	

c13: IF B.8/2 -- Acknowledged connectionless mode THEN m ELSE n/a.

Annex C (normative): Profile Requirement List for RTTT applications profile of DSRC data link layer for OBU

C.1 General

The purpose of this requirement list is to specify the modifications that apply to the status of the items affected in the ICS proforma of each base specifications.

The supplier of a protocol implementation which is claimed to conform to the OBU specific requirements of EN 13372 [2] shall verify that his particular data link layer protocol implementation meets the profile RL for this layer. For this, he shall complete a copy of the corresponding layer PICS proforma contained in annex A of the present document, updated with the requirements from this annex.

C.1.1 Profile Requirement List (profile RL)

The profile Requirement List (profile RL) for the data link layer as defined in this annex is based on annex A of the present document. For every capability listed in annex A, the profile requirements are expressed by restriction upon allowed support answers in annex A. The profile RL is produced by copying selected tables from annex A, removing the column(s) to be completed by the supplier, and adding a new set of columns giving the new profile requirements, both in terms of the status and allowed values. The tables are referenced by their numbering in annex A.

Profile status column:

The standardized symbols for the status column are as follows:

- m mandatory - the capability is required to be supported;
- o optional - the capability may be supported or not;
- n/a not applicable - in the given context, it is impossible to use the capability;
- x prohibited (excluded) - there is a requirement not to use this capability in the given context;
- o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies a unique group of related optional items and the logic of their selection which is defined immediately following the table;
- ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table or which is defined in the general condition table below.

Reference column:

The reference column gives reference to EN 13372 [2], except where explicitly stated otherwise.

C.2 Identification of the profile

This profile Requirement List applies to the following standard:

EN 13372 [2]: "Road Transport and Traffic Telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT applications". This profile Requirement List applies only for On-Board Units.

C.3 Tables for Services and Service Access Points

This clause identifies the modifications to the requirements expressed in the PICS proforma specification for data link layer Services and Service Access Points.

C.3.1 Communication Direction

Table C.1: Table A.2, Communication Direction

Item	Service implemented	Reference	Status
2	Uplink from OBU to RSU	6.4.2	m

C.4 Tables for LLC Data Service

There are no modifications to the requirements expressed in the PICS proforma specification for data link layer LLC service.

Annex D (normative): Profile Requirement List for RTTT applications profile of DSRC data link layer for RSU

D.1 General

The purpose of this requirement list is to specify the modifications that apply to the status of the items affected in the ICS proforma of each base specifications.

The supplier of a protocol implementation which is claimed to conform to the RSU specific requirements of EN 13372 [2] shall verify that his particular data link layer protocol implementation meets the profile RL for this layer. For this, he shall complete a copy of the corresponding layer PICS proforma contained in annex B, updated with the requirements from this annex.

D.1.1 Profile Requirement List (profile RL)

The profile Requirement List (profile RL) for the data link layer as defined in this annex is based on annex B of the present document. For every capability listed in annex B, the profile requirements are expressed by restriction upon allowed support answers in annex B. The profile RL is produced by copying selected tables from annex B, removing the column(s) to be completed by the supplier, and adding a new set of columns giving the new profile requirements, both in terms of the status and allowed values. The tables are referenced by their numbering in annex B.

Profile status column:

The standardized symbols for the status column are as follows:

- m mandatory - the capability is required to be supported;
- o optional - the capability may be supported or not;
- n/a not applicable - in the given context, it is impossible to use the capability;
- x prohibited (excluded) - there is a requirement not to use this capability in the given context;
- o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies a unique group of related optional items and the logic of their selection which is defined immediately following the table;
- ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying a unique conditional status expression which is defined immediately following the table or which is defined in the general condition table below.

Reference column:

The reference column gives reference to EN 13372 [2], except where explicitly stated otherwise.

D.2 Identification of the profile

This profile Requirement List applies to the following standard:

EN 13372 [2]: "Road Transport and Traffic Telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT applications". This profile Requirement List applies only for Road-Side Units.

D.3 Global Roles

This clause identifies the modifications to the requirements expressed in the PICS proforma specification for data link layer Global Roles.

D.3.1 Communication Direction

Table D.1: Table B.2, Communication Direction

Item	Service implemented	Reference	Status
2	Uplink from OBU to RSU	6.4.2	m

D.4 LLC Data Service

There are no modifications to the requirements expressed in the PICS proforma specification for data link layer LLC service.

Annex E (normative): Profile specific ICS proforma for RTTT applications profile of DSRC data link layer for OBU

E.1 Guidance for completing the profile ICS proforma

E.1.1 Purposes and structure

The purpose of this profile ICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 13372 [2] may provide information about the implementation in a standardized manner.

The profile ICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the ICS proforma;
- identification of the implementation;
- identification of the profile;
- global statement of conformance;
- ICS proforma tables:
  - MAC Data Service;
  - LLC Data Service.

E.1.2 Abbreviations and conventions

The profile ICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.

o.i qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.

ci conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to EN 13372 [2], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y supported by the implementation.

N or n not supported by the implementation.

N/A, n/a or - no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

NOTE: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2, 4, 6, 8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the profile ICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 1: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 2: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

E.1.3 Instructions for completing the profile ICS proforma

The supplier of the implementation shall complete the profile ICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause E.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

E.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the profile ICS should be named as the contact person.

E.2.1 Date of the statement

.....

E.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

E.2.3 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

E.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

E.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

E.2.6 Profile ICS contact person

(A person to contact if there are any queries concerning the content of the profile ICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

E.3 Identification of the profile

This profile ICS proforma applies to the following standard:

EN 13372 [2]: "Road Transport and Traffic Telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT applications". This profile ICS proforma applies only for On-Board Units.

E.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the profile ICS, with an explanation of why the implementation is non-conforming, on pages attached to the profile ICS proforma.

E.5 MAC Data Services

E.5.1 Protocol procedures

Table E.1: MAC protocol procedures

Item	Procedure	Reference	Status	Support
1	Private uplink windows request	6.2.2	m	

E.5.2 MAC Control Field

Table E.2: MAC Control field values

Item	Field implemented	Reference	Status	Values	
				Allowed	**Supported**
1	MAC control field transmitted	6.4.2	m	'60'H	
2	MAC control field transmitted	6.4.2	m	'C0'H	
3	MAC control field transmitted	6.4.2	o	'D0'H	
4	MAC control field received	6.4.2	m	"20'H	
5	MAC control field received	6.4.2	m	'28'H	
6	MAC control field received	6.4.2	m	'80'H	
7	MAC control field received	6.4.2	m	'A0'H	
8	MAC control field received	6.4.2	o	'A8'H	

E.6 LLC Data Service

E.6.1 LLC Acknowledged Services

E.6.1.1 LLC Status Field

Table E.3: LLC Status field

Item	LLC status subfield purpose	Value	Reference	Status	Support
1	Command received but not understood	'10'H	6.4.2	o	

E.6.1.2 Protocol procedures

Table E.4: ACn protocol procedures

Item	Procedure	Reference	Status	Support
1	Late response procedure I	7.2.2	o.1	
2	Late response procedure II	7.2.3	o.1	

o..1 At least one of the options shall be implemented.

Annex F (normative): Profile specific ICS proforma for RTTT applications profile of DSRC data link layer for RSU

F.1 Guidance for completing the profile ICS proforma

F.1.1 Purposes and structure

The purpose of this profile ICS proforma is to provide a mechanism whereby a supplier of an implementation of the requirements defined in EN 13372 [2] may provide information about the implementation in a standardized manner.

The profile ICS proforma is subdivided into clauses for the following categories of information:

- guidance for completing the ICS proforma;
- identification of the implementation;
- identification of the profile;
- global statement of conformance;
- ICS proforma tables:
  - MAC Data Service;
  - LLC Data Service.

F.1.2 Abbreviations and conventions

The profile ICS proforma contained in this annex is comprised of information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [4].

Item column

The item column contains a number which identifies the item in the table.

Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

Status column

The following notations, defined in ISO/IEC 9646-7 [4], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.
ci	conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items. "i" is an integer identifying an unique conditional status expression which is defined immediately following the table.

Reference column

The reference column makes reference to EN 13372 [2], except where explicitly stated otherwise.

Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [4], are used for the support column:

Y or y	supported by the implementation.
N or n	not supported by the implementation.
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

NOTE: As stated in ISO/IEC 9646-7 [4], support for a received PDU requires the ability to parse all valid parameters of that PDU. Supporting a PDU while having no ability to parse a valid parameter is non-conformant. Support for a parameter on a PDU means that the semantics of that parameter are supported.

Values allowed column

The values allowed column contains the type, the list, the range, or the length of values allowed. The following notations are used:

- range of values: <min value> .. <max value>
  example: 5 .. 20

- list of values: <value1>, <value2>, ..., <valueN>
  example: 2, 4, 6, 8, 9
  example: '1101'B, '1011'B, '1111'B
  example: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)
  example: reject(1), accept(2)

- length: size (<min size> .. <max size>)
  example: size (1 .. 8)

Values supported column

The values supported column shall be filled in by the supplier of the implementation. In this column, the values or the ranges of values supported by the implementation shall be indicated.

References to items

For each possible item answer (answer in the support column) within the profile ICS proforma a unique reference exists, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns are discriminated by letters (a, b, etc.), respectively.

EXAMPLE 1: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 2: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

F.1.3 Instructions for completing the profile ICS proforma

The supplier of the implementation shall complete the profile ICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support or supported column boxes provided, using the notation described in clause F.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables or separately.

F.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the profile ICS should be named as the contact person.

F.2.1 Date of the statement

.....

F.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

F.2.3 System Under Test (SUT) identification

SUT name:

.....

.....

Hardware configuration:

.....

.....

.....

Operating system:

.....

F.2.4 Product supplier

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

F.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

F.2.6 Profile ICS contact person

(A person to contact if there are any queries concerning the content of the Profile ICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

.....

.....

F.3 Identification of the profile

This profile ICS proforma applies to the following standard:

EN 13372 [2]: "Road Transport and Traffic Telematics (RTTT) - Dedicated short-range communication - Profiles for RTTT applications". This profile ICS proforma applies only for Road-Side Units.

F.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the protocol specification. Non-supported mandatory capabilities are to be identified in the profile ICS, with an explanation of why the implementation is non-conforming, on pages attached to the profile ICS proforma.

F.5 MAC Data Services

F.5.1 MAC Control Field

Table F.1: MAC Control field values

Item	Field implemented	Reference	Status	Values	
				Allowed	Supported
1	MAC control field received	6.4.2	m	'60'H	
2	MAC control field received	6.4.2	m	'C0'H	
3	MAC control field received	6.4.2	o	'D0'H	
4	MAC control field transmitted	6.4.2	m	"20'H	
5	MAC control field transmitted	6.4.2	m	'28'H	
6	MAC control field transmitted	6.4.2	m	'80'H	
7	MAC control field transmitted	6.4.2	m	'A0'H	
8	MAC control field transmitted	6.4.2	o	'A8'H	

F.6 LLC Data Service

F.6.1 LLC Acknowledged Services

F.6.1.1 LLC Status Field

Table F.2: LLC Status subfield

Item	LLC status subfield purpose	Value	Reference	Status	Support
1	Command received but not understood	'10'H	6.4.2	o	

F.6.1.2 Protocol procedures

Table F.3: ACn protocol procedures

Item	Procedure	Reference	Status	Support
1	Late response procedure I	7.2.2	o.1	
2	Late response procedure II	7.2.3	o.1	

o..1 At least one of the options shall be implemented.

History

Document history		
V1.1.1	March 2006	Publication