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proforma specification**

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## Foreword

This European Telecommunication Standard (ETS) has been produced by the Terrestrial Trunked Radio (TETRA) Project of the European Telecommunications Standards Institute (ETSI).

This ETS is a multi-part standard and will consist of the following parts:

Part 1: "General network design";

Part 2: "Air Interface (AI)";

Part 7: "Security";

Part 10: "SDL model of the Air Interface (AI)";

**Part 11: "Protocol Implementation Conformance Statement (PICS) proforma specification".**

Transposition dates	
Date of adoption of this ETS:	27 November 1998
Date of latest announcement of this ETS (doa):	28 February 1999
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 August 1999
Date of withdrawal of any conflicting National Standard (dow):	31 August 1999

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## 1 Scope

This ETS provides the Protocol Implementation Conformance Statement (PICS) proforma for the TETRA Mobile Station (MS), Packet Data Optimized (PDO) Air Interface (AI) defined in ETS 300 393-2 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [5], ETS 300 406 [2], and in ETR 212 [3].

The details of Supplementary Services (SS) and security aspects of PDO are outside the scope of this ETS.

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 393-2 (1996): "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA); Packet Data Optimized (PDO); Part 2: Air Interface (AI)".
- [2] ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [3] ETR 212 (1995): "Methods for Testing and Specification (MTS); Implementation Conformance Statement (ICS) proforma style guide".
- [4] ISO/IEC 9646-1 (1994): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [5] ISO/IEC 9646-7 (1995): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [6] ISO/IEC 8208 (1995): "Information technology - Data Communications - X25 Packet Layer Protocol for Data Terminal equipment".
- [7] ISO/IEC 8348 (1997): "Information technology - Open Systems Interconnection - Network Service Definition".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of this ETS, the following definitions apply:

- terms defined in ETS 300 393-2 [1];
- terms defined in ISO/IEC 9646-1 [4] and in ISO/IEC 9646-7 [5].

In particular, the following terms defined in ISO/IEC 9646-1 [4] apply:

**Implementation Conformance Statement (ICS):** A 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:** A document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS.

**Protocol ICS (PICS):** An ICS for an implementation or system claimed to conform to a given protocol specification.

### 3.2 Abbreviations

For the purposes of this ETS, the following abbreviations apply:

AI	Air Interface
BS	Base Station
CONP	Connection Oriented Network Protocol
DTMF	Dual Tone Multi Frequency
ETS	European Telecommunication Standard
ICS	Implementation Conformance Statement
ITSI	Individual TETRA Subscriber Identity
IUT	Implementation Under Test
LLC	Logical Link Control
LLME	Lower Layer Management Entity
MAC	Medium Access Control
MCC	Mobile Country Code
MLE	Mobile Link Entity
MM	Mobility Management
MNC	Mobile Network Code
MS	Mobile Station
PDO	Packet Data Optimized
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PTT	Push To Talk
RES	Radio Equipment and Systems
RPDI	Radio Packet Data Infrastructure
SAP	Service Access Point
SCLNP	Specific Connectionless Network Protocol
SCS	System Conformance Statement
SDU	Service Data Unit
SP	Service Primitive
SS	Supplementary Services
SUT	System Under Test

## 4 Conformance to this PICS proforma specification

If it claims to conform to this ETS, 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.

A PICS which conforms to this ETS shall be a conforming PICS proforma completed in accordance with the guidance for completion given in clause A.1.



## Annex A (normative): Protocol ICS proforma for ETS 300 393-2

Notwithstanding the provisions of the copyright clause related to the text of this ETS, ETSI grants that users of this ETS may freely reproduce the PICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed PICS.

### 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 ETS 300 393-2 [1] may provide information about the implementation in a standardized manner.

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

- guidance for completing the PICS proforma;
- identification of the implementation;
- identification of the protocol;
- global statement of conformance;
- Mobility Management (MM);
- Mobile Link Entity (MLE);
- Logical Link Control (LLC);
- Medium Access Control (MAC);
- Connection Oriented Network Protocol (CONP);
- Specific Connectionless Network Protocol (SCLNP).

#### A.1.2 Abbreviations and conventions

The PICS proforma contained in this annex is comprising information in tabular form in accordance with the guide-lines presented in ISO/IEC 9646-7 [5].

##### 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. elements, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

##### Status column

The following notations, defined in ISO/IEC 9646-7 [5], 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 gives reference to ETS 300 393-2 [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 [5], 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)

It is also possible to provide a comment to an answer in the space provided at the bottom of the table.

NOTE 1: As stated in ISO/IEC 9646-7 [5], support for a received Protocol Data Unit (PDU) requires the ability to encode/decode all mandatory elements of that PDU. Supporting a PDU while having no ability to encode/decode a mandatory element is non-conformant. Support for an element of a PDU means that the semantics of that element are supported. It does not mean that the element shall always be present in the PDU.

### 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 1: 5 .. 20

- list of values: <value1>, <value2>, ....., <valueN>

EXAMPLE 2: 2, 4, 6, 8, 9

EXAMPLE 3: '1101'B, '1011'B, '1111'B

EXAMPLE 4: '0A'H, '34'H, '2F'H

- list of named values: <name1>(<val1>), <name2>(<val2>), ..., <nameN>(<valN>)

EXAMPLE 5: reject(1), accept(2)

- length: size (<min size> .. <max size>)

EXAMPLE 6: 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 exists a unique reference, 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 7: A.5/4 is the reference to the answer of item 4, in table 5 of annex A.

EXAMPLE 8: 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 in the beginning of a clause or table indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

NOTE 2: In this PICS proforma, all the tables have a prerequisite independently on the status of the predicate referred to being mandatory or optional. This is done for readability reasons.

### 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 subclause A.1.2.

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

More detailed instructions are given at the beginning of the different subclauses of the PICS proforma.

## 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:

**ETS 300 393-2 (1996):** "Radio Equipment and Systems (RES); Trans-European Trunked Radio (TETRA); Packet Data Optimized (PDO); Part 2: Air Interface (AI)".

### 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 Major capabilities

The supplier of the implementation shall state the support of the implementation for each of the following protocol entities, in table A.1.

**Table A.1: Entities supported**

Item	Entity	Reference	Status	Support
1	Connection Oriented Network Protocol (CONP)	11, 12	o.1	
2	Specific Connectionless Protocol (SCLNP)	13, 14	o.1	
3	Mobility Management (MM)	15, 16	m	
4	Mobile Link Entity (MLE)	17, 18	m	
5	Logical Link Control (LLC)	20, 21	m	
6	Medium Access Control (MAC)	20, 22	m	

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

### A.6 Connection Oriented Network Protocol (CONP)

The PICS for CONP is defined in ISO/IEC 8208 [6] and ISO/IEC 8348 [7]. It shall apply if item 1 is supported in table A.1.

### A.7 Specific Connectionless Network Protocol

#### A.7.1 SCLNP procedures

The supplier of the implementation shall state the support of the implementation for each of the SCLNP procedures presented in table A.2.

**Table A.2: Protocol procedures**

Prerequisite: A.1/2							
Item	Procedure	Sender			Receiver		
		Reference	Status	Support	Reference	Status	Support
1	DT PDU composition	14.7.1	m			n/a	
2	DT PDU decomposition		n/a		14.7.3	m	
3	DEL PDU decomposition	14.7.4	m			n/a	
4	Forward PDU	14.7.6	m			n/a	
5	Discard PDU		n/a		14.7.7	m	
6	Subaddressing	14.7.9.1	m		14.7.9.1	m	
7	Priority	14.7.9.2	m		14.7.9.2	m	

**A.7.2 SCLNP PDUs**

The supplier of the implementation shall state the support of the implementation for each of the SCLNP PDUs presented in table A.3.

**Table A.3: SCLNP PDUs**

Prerequisite: A.1/2							
Item	PDU	Sender			Receiver		
		Reference	Status	Support	Reference	Status	Support
1	S1-DT	14.7.1	m			n/a	
2	S2-DT		n/a		14.7.3	m	
3	S2-DEL		n/a		14.7.4	m	

**A.7.3 SCLNP PDU elements**

The supplier of the implementation shall state the support of the implementation for each of the SCLNP PDU elements presented in tables A.4 to A.6.

**Table A.4: S1-DT elements**

Prerequisite: A.1/2				
Item	Element	Reference	Status	Support
1	All elements	14.7.1,14.7.1.4	m	

**Table A.5: S2-DT elements**

Prerequisite: A.1/2				
Item	Element	Reference	Status	Support
1	All elements	14.4.2, 14.4.3, 14.9	m	

**Table A.6: S2-DEL elements**

Prerequisite: A.1/2				
Item	Element	Reference	Status	Support
1	All elements	14.4.5, 14.4.6, 14.9	m	



## A.8 Mobility Management (MM)

### A.8.1 MM features

The supplier of the implementation shall state the support of the implementation for each of the MM features presented in table A.7.

**Table A.7: MM features**

Item	MM feature	Reference	Status	Support
1	Registration procedures	15.2, 16.4	m	
2	Deregistration procedure	15.2, 16.5	o	
3	Change of energy economy mode procedures	15.2, 16.6	c701	
4	Enable/disable procedures	16.3.1.1, 16.3.1.2	m	
5	Group identities download procedures	15.2	o	
6	PDU encoding	16.9.1	m	
7	PDU decoding	16.9.1	m	

c701: IF A. 77/6 -- If energy economy mode supported then mandatory  
THEN m  
ELSE n/a

### A.8.2 MM procedures

The supplier of the implementation shall state the support of the implementation for each of the MM procedures presented in tables A.8 to A.12.

**Table A.8: MM registration procedures**

Item	Registration procedures	Reference	Status	Support
1	MLE initiated registration	16.4.1	m	
2	User application initiated registration	16.4.2	m	
3	User application initiated registration procedure at powerup	16.4.2	m	
4	Infrastructure initiated registration	16.4.3	m	
5	Colliding registrations	16.4.4	o	
6	Expiry of timer T351	16.4.5	m	

**Table A.9: MLE initiated registration procedures**

Item	MLE initiated registration procedure	Reference	Status	Support
1	Normal roaming registration	16.4.1.1	m	
2	Normal migration registration	16.4.1.1	o	

**Table A.10: User application initiated registration procedures**

Item	User application initiated registration procedure	Reference	Status	Support
1	No new ITSI registration	16.4.2	o	
2	New ITSI registration	16.4.2	m	
3	New unexchanged ITSI registration	16.4.2	c1001	

c1001: IF A.9/2 -- If normal migration registration supported then mandatory  
THEN m  
ELSE n/a

**Table A.11: MM enable/disable procedures**

Item	Enable/disable procedure	Reference	Status	Support
1	Temporary disable of MS	16.5	m	
2	Permanent disable of MS	16.5	o	
3	Enable of MS	16.5	m	

**Table A.12: MM group identities download procedures**

Item	Group identities download procedures	Reference	Status	Support
1	Infrastructure initiated group identities download procedure	16.8.1	o	
2	Infrastructure initiated group identity report request	16.8.1	c1201	

c1201: IF A.12/1 -- If infrastructure initiated group identities download supported then mandatory  
THEN m  
ELSE n/a

**A.8.3 MM PDUs**

The supplier of the implementation shall state the support of the implementation for each of the MM PDUs presented in table A.13.

**Table A.13: MM PDUs**

Item	PDU	Reference	Status	Support
1	D-GROUP IDENTITY COMMAND	16.7	c1301	
2	D-DISABLE	16.5	m	
3	D-ENABLE	16.5	m	
4	D-ENERGY SAVING	16.6	c1302	
5	D-STATUS	16.6	c1303	
6	D-LOCATION UPDATE ACCEPT	16.4.1.1, 16.4.3	m	
7	D-LOCATION UPDATE COMMAND	16.4.3, 16.4.4	m	
8	D-LOCATION UPDATE REJECT	16.4.1.1, 16.4.2, 16.4.3	m	
9	U-GROUP IDENTITY ACKNOWLEDGEMENT	16.7	c1301	
10	U-ITSI DETACH	16.5	c1303	
11	U-LOCATION UPDATE DEMAND	16.4.1.1, 16.4.3	m	
12	U-STATUS	16.6	c1302	

NOTE: The D-PDUs are received in the MS and U-PDUs are transmitted from the MS.

c1301: IF A.7/5 -- If group identities download procedure supported then mandatory  
THEN m  
ELSE n/a

c1302: IF A.77/6 -- If energy economy mode supported then mandatory  
THEN m  
ELSE n/a

c1303: IF A.7/2 -- If de-registration supported then mandatory  
THEN m  
ELSE n/a

**A.8.4 MM PDU elements**

The supplier of the implementation shall state the support of the implementation for each of the MM PDU elements presented in tables A.14 to A.25.

**Table A.14: Elements for MM D- GROUP IDENTITY COMMAND PDU**

Prerequisite: A.13/1				
Item	Element	Reference	Status	Support
1	Message identifier	16.8.2.1	m	
2	ISSI	16.8.2.1	m	
3	Command	16.8.2.1	m	
4	New GSSI	16.8.2.1	m	

**Table A.15: Elements for MM D-DISABLE PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.2.2	m	
2	Disabling type	16.8.2.2	m	
3	TETRA equipment identity	16.8.2.2	m	
4	Address extension	16.8.2.2	m	
5	Proprietary	16.8.2.2	o	

**Table A.16: Elements for MM D-ENABLE PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.2.3	m	
2	TETRA equipment identity	16.8.2.3	m	
3	Address extension	16.8.2.3	m	
4	Proprietary	16.8.2.3	o	

**Table A.17: Elements for MM D-ENERGY SAVING PDU**

Prerequisite: A.13/4				
Item	Element	Reference	Status	Support
1	PDU type	16.8.2.4	m	
2	Status	16.8.2.4	m	
3	Energy saving information	16.8.2.4	m	
4	Proprietary	16.8.2.4	o	

**Table A.18: Elements for MM D-STATUS PDU**

Prerequisite: A.13/5				
Item	Element	Reference	Status	Support
1	PDU type	16.8.2.9	m	
2	Status	16.8.2.9	m	
3	Proprietary	16.8.2.9	o	

**Table A.19: Elements for MM D-LOCATION UPDATE ACCEPT PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.2.5	m	
2	Location update type	16.8.2.5	m	
3	SSI	16.8.2.5	m	
4	Address extension	16.8.2.5	m	
5	Subscriber class	16.8.2.5	m	
6	Energy saving information	16.8.2.5	m	
7	Reserved	16.8.2.5	m	
8	New registered area	16.8.2.5	m	
9	Group identity location accept	16.8.2.5	m	
10	Proprietary	16.8.2.5	o	

**Table A.20: Elements for MM D-LOCATION UPDATE COMMAND PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.2.6	m	
2	Group identity report	16.8.2.6	m	
3	Reserved	16.8.2.6	m	
4	Reserved	16.8.2.6	m	
5	Address extension	16.8.2.6	m	
6	Proprietary	16.8.2.6	o	

**Table A.21: Elements for MM D-LOCATION UPDATE REJECT PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.2.7	m	
2	Location update type	16.8.2.7	m	
3	Reject cause	16.8.2.7	m	
4	Reserved	16.8.2.7	m	
5	Reserved	16.8.2.7	m	
6	Address extension	16.8.2.7	m	
7	Proprietary	16.8.2.7	o	

**Table A.22: Elements for MM U-ITSI DETACH PDU**

Prerequisite: A.13/10				
Item	Element	Reference	Status	Support
1	PDU type	16.8.3.2	m	
2	Address extension	16.8.3.2	m	
3	Proprietary	16.8.3.2	o	

**Table A.23: Elements for MM U-LOCATION UPDATE DEMAND PDU**

Item	Element	Reference	Status	Support
1	PDU type	16.8.3.3	m	
2	Location update type	16.8.3.3	m	
3	Request to append location area	16.8.3.3	m	
4	Cipher control	16.8.3.3	m	
5	Reserved	16.8.3.3	m	
6	Energy saving mode	16.4.2	c2301	
7	Location area information	16.8.3.3	m	
8	SSI	16.8.3.3	m	
9	Address extension	16.8.3.3	m	
10	Group identity location demand ack	16.8.3.3	m	
11	Group identity location demand	16.8.3.3	o	
12	Proprietary	16.8.3.3	o	

NOTE: The information contents of the "Class of MS" field is subject to dynamic protocol conformity and therefore no detailed information of that is required in this ETS.

c2301: IF A. 77/6      -- If energy economy mode supported then mandatory  
           THEN m  
           ELSE n/a

**Table A.24: Elements for MM U-STATUS PDU**

Prerequisite: A.13/12				
Item	Element	Reference	Status	Support
1	PDU type	16.8.3.4	m	
2	Status	16.8.3.4	m	
3	Energy saving mode	16.8.3.4	m	
4	Proprietary	16.8.3.4	o	

**Table A.25: Elements for MM U-GROUP IDENTITY ACKNOWLEDGEMENT PDU**

Prerequisite: A.13/9				
Item	Element	Reference	Status	Support
1	Message Identifier	16.8.3.1	m	
2	Accept/reject	16.8.3.1	m	
3	Reject reason	16.8.3.1	m	
4	New GSSI	16.8.3.1	m	

#### A.8.5 MM timers

The supplier of the implementation shall state the support of the implementation for the MM timer presented in table A.26.

**Table A.26: MM timers**

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
1	T351	16.11.1.1	m		30 --Sec	

## A.9 Mobile Link Entity (MLE)

### A.9.1 MLE features

The supplier of the implementation shall state the support of the implementation for each of the MLE features, presented in table A.27.

**Table A.27: MLE features**

Item	MLE Feature	Reference	Status	Support
1	Cell monitoring	18.3.4.2	m	
2	Cell selection, initial	18.3.4.6	m	
3	Cell re-selection	18.3.4.7	m	
4	Cell scanning	18.3.4.1	m	
5	Cell surveillance	18.3.4.3	m	
6	Data transfer MM	18.3.5.3.1	m	
7	Data transfer CONP	18.3.5.3.1	c2701	
8	Data transfer SCLNP	18.3.5.3.1	c2702	
9	Immediate system information	18.3.6.1, 18.3.6.2	m	
10	Network broadcast Information reception	18.3.6.1, 18.3.6.2	m	
11	Initial cell selection	18.3.4.6	m	
12	Neighbour cell enquiry	18.3.6.5	o	

c2701: IF A.1/1            -- If CONP supported then mandatory  
THEN m  
ELSE n/a

c2702: IF A.1/2            -- If SCLNP supported then mandatory  
THEN m  
ELSE n/a

### A.9.2 MLE procedures

The supplier of the implementation shall state the support of the implementation for each of the following MLE procedures in the tables below.

**Table A.28: MLE cell monitoring procedures**

Item	MLE procedure	Reference	Status	Support
1	Start monitoring procedure	18.3.4.2	m	
2	Monitoring indication reception	18.3.4.2	m	
3	Stop monitoring procedure	18.3.4.2	m	

**Table A.29: MLE cell re-selection procedures**

Item	MLE procedure	Reference	Status	Support
1	Undeclared cell re-selection	18.3.4.7.2	m	
2	Unannounced cell re-selection	18.3.4.7.3	m	
3	Announced type 3 cell re-selection	18.3.4.7.4	m	
4	Announced type 2 cell re-selection	18.3.4.7.5	o	

Table A.30: MLE cell scanning procedures

Item	MLE procedure	Reference	Status	Support
1	Start scanning procedure	18.3.4.5.2	m	
2	Foreground scanning	18.3.4.1, 18.3.4.7.1	m	
3	Interrupting scanning	18.3.4.1, 18.3.4.7.1	o	
4	Background scanning	18.3.4.1, 18.3.4.7.1	c3001	
5	Cell scan result reception	18.3.4.2	m	

c3001: IF (A.29/4) -- If announced type 2 cell re-selection supported then mandatory  
 THEN m  
 ELSE o

Table A.31: MLE surveillance procedures

Item	MLE procedure	Reference	Status	Support
1	Cell surveillance indication reception	18.3.4.3	m	

Table A.32: MM-MLE data transfer procedures

Item	MLE procedure	Reference	Status	Support
1	Acknowledged MM data transmission	18.3.5.3.1	m	
2	Acknowledged response MM data transmission	18.3.5.3.1	m	

Table A.33: CONP-MLE data transfer procedures

Prerequisite: A. 27/7				
Item	MLE procedure	Reference	Status	Support
1	Acknowledged & acknowledged response CONP data transmission	18.3.5.3.1	m	
2	Unacknowledged CONP data transmission	18.3.5.3.1	m	

o.33: It is mandatory to support at least one of these items.

Table A.34: SCLNP-MLE data transfer procedures

Prerequisite: A. 27/8				
Item	MLE procedure	Reference	Status	Support
1	Acknowledged & acknowledged response SCLNP data transmission	18.3.5.3.1	m	
2	Unacknowledged SCLNP data transmission	18.3.5.3.1	m	

o.34: It is mandatory to support at least one of these items.

**Table A.35: MLE initial cell selection**

Item	MLE procedure	Reference	Status	Support
1	Initial cell selection	18.3.4.6	m	

**Table A.36: MLE network broadcast information reception**

Item	MLE procedure	Reference	Status	Support
1	Network broadcast reception	18.3.6.2	m	

**Table A.37: MLE neighbour cell enquiry**

Prerequisite: A.27/12				
Item	MLE procedure	Reference	Status	Support
1	Neighbour cell enquiry	18.3.6.5	o	

**Table A.38: MLE immediate system Information reception**

Item	MLE procedure	Reference	Status	Support
1	System information indication reception	18.3.6.4	m	

### A.9.3 MLE PDUs

The supplier of the implementation shall state the support of the implementation for each of the MLE PDUs presented in table A.39.

**Table A.39: MLE PDUs**

Item	PDU	Reference	Status	Support
1	MLE service user PDU	18.4.1.3	m	
2	D-NWRK-BROADCAST	18.4.1.4.1	m	
3	D-NEW-CELL	18.4.1.4.2	m	
4	D-PREPARE-FAIL	18.4.1.4.3	c3901	
5	D-RESTORE-ACK	18.4.1.4.4	c3902	
6	D-RESTORE-FAIL	18.4.1.4.5	c3902	
7	U-PREPARE	18.4.1.4.6	m	
8	U-RESTORE	18.4.1.4.7	c3902	
9	D-MLE-SYSINFO	18.4.1.5	m	

c3901: IF (A.29/4 OR A.27/12)  
THEN m  
ELSE n/a  
-- If announced type 2 cell re-selection or neighbour cell enquiry  
-- procedure supported then mandatory

c3902: IF (A.1/1)  
THEN m  
ELSE n/a  
-- If CONP entity is supported then mandatory



#### A.9.4 MLE timers

The supplier of the implementation shall state the support of the implementation for the MLE timer presented in table A.40.

**Table A.40: MLE timers**

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
1	T.370	18.6.1	m		5 s	

#### A.9.5 MLE PDU elements

The supplier of the implementation shall state the support of the implementation for each of the MLE PDU elements presented in tables A.41 to A.49.

**Table A.41: Elements for MLE service user PDU**

Item	Element	Reference	Status	Support
1	All elements	18.4.1.3	m	

**Table A.42: Elements for MLE network broadcast PDU**

Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.1	m	

**Table A.43: Elements for MLE D-NEW-CELL PDU**

Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.2	m	

**Table A.44: Elements for MLE D-PREPARE-FAIL PDU**

Prerequisite: A. 39/4				
Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.3	m	

**Table A.45: Elements for MLE D-RESTORE-ACK PDU**

Prerequisite: A. 39/5				
Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.4	m	

**Table A.46: Elements for MLE D-RESTORE-FAIL PDU**

Prerequisite: A. 39/6				
Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.5	m	

**Table A.47: Elements for MLE U-PREPARE PDU**

Item	Element	Reference	Status	Support
1	PDU type	18.4.1.4.6	m	
2	Cell identifier	18.3.4.7.5, 18.3.6.5 & 18.4.1.4.6	c4701 (m)	

c4701: IF (A.29/4 OR A.27/12)  
THEN m  
ELSE o

-- If announced type 2 cell re-selection or neighbour cell enquiry  
-- procedure supported then mandatory

**Table A.48: Elements for MLE U-RESTORE PDU**

Prerequisite: A. 39/8				
Item	Element	Reference	Status	Support
1	All elements	18.4.1.4.7	m	

**Table A.49: Elements for D-MLE-SYSINFO PDU**

Item	Element	Reference	Status	Support
1	All elements	18.4.1.5	m	

## A.10 Layer 2

### A.10.1 Layer 2 PDUs

The supplier of the implementation shall state the support of the implementation for each of the Layer 2 PDUs presented in tables A.50 and A.51.

**Table A.50: Layer 2 downlink PDUs**

Item	Downlink PDU	Reference	Status	Support
1	SIN1 - system information, type 1	20.3.13	m	
2	SIN2 - system information, type 2	20.3.12	m	
3	AP - access parameters	20.3.11	m	
4	DR1 - response to uplink data type 1	20.3.4	m	
5	DR2 - response to uplink data type 2	20.3.5	m	
6	DR3 - negative acknowledge	20.3.6	m	
7	AA - access announce	20.3.7	m	
8	DD1 - downlink data, type 1	20.3.8	m	
9	DD2 - downlink data, type 2	20.3.9	m	
10	WU - wake up	20.3.10	m	

**Table A.51: Layer 2 uplink PDUs**

Item	Uplink PDU	Reference	Status	Support
1	UR - response to downlink data	20.3.1	m	
2	UD1 - uplink data, type 1	20.3.2	m	
3	UD2 - uplink data, type 2	20.3.3	m	

**A.10.2 Layer 2 PDU elements**

The supplier of the implementation shall state the support of the implementation for each of the Layer 2 PDU elements presented in tables A.52 to A.64.

**Table A.52: Elements for SIN1**

Item	Element	Reference	Status	Support
1	All elements	20.3.13	m	

**Table A.53: Elements for SIN2**

Item	Element	Reference	Status	Support
1	All elements	20.3.12	m	

**Table A.54: Elements for AP**

Item	Element	Reference	Status	Support
1	All elements	20.3.11	m	

**Table A.55: Elements for DR1**

Item	Element	Reference	Status	Support
1	All elements	20.3.4	m	

**Table A.56: Elements for DR2**

Item	Element	Reference	Status	Support
1	All elements	20.3.5	m	

**Table A.57: Elements for DR3**

Item	Element	Reference	Status	Support
1	All elements	20.3.6	m	

**Table A.58: Elements for AA**

Item	Element	Reference	Status	Support
1	All elements	20.3.7	m	

**Table A.59: Elements for DD1**

Item	Element	Reference	Status	Support
1	All elements	20.3.8	m	

**Table A.60: Elements for DD2**

Item	Element	Reference	Status	Support
1	All elements	20.3.9	m	

**Table A.61: Elements for WU**

Item	Element	Reference	Status	Support
1	All elements	20.3.10	m	

**Table A.62: Elements for UR**

Item	Element	Reference	Status	Support
1	All elements	20.3.1	m	

**Table A.63: Elements for UD1**

Item	Element	Reference	Status	Support
1	All elements	20.3.2	m	

**Table A.64: Elements for UD2**

Item	Element	Reference	Status	Support
1	All elements	20.3.3	m	

### A.10.3 Logical Link Control (LLC)

The supplier of the implementation shall state the support of the implementation for each of the LLC features presented in table A.65.

**Table A.65: LLC features**

Item	LLC feature	Reference	Status	Support
1	Acknowledged service	21.4.8	m	
2	Unacknowledged service	21.4.7	m	

#### A.10.3.1 LLC procedures

The supplier of the implementation shall state the support of the implementation for each of the LLC procedures presented in tables A.66 and A.67.

**Table A.66: LLC procedures for acknowledged service**

Item	Procedure	Reference	Status	Support
1	Connection establishment	21.4.6	m	
2	Data reception	21.4.8.2	m	
3	Data transmission	21.4.8.1	m	
4	Extended error protection	21.4.9	m	
5	Segment sequencing	21.3.5.1	m	
6	Frame sequencing	21.3.5.2	m	
7	Windowing	21.4.8.4	m	

**Table A.67: LLC procedures for unacknowledged service**

Item	Procedure	Reference	Status	Support
1	Connection establishment	21.4.5	n/a	
1	Data reception	21.4.7.2	m	
2	Data transmission <sup>4</sup>	21.4.7.1	m	
3	Extended error protection	21.4.9	m	
4	Segment sequencing	21.3.5.1	m	

**A.10.3.2 LLC constants**

The supplier of the implementation shall state the support of the implementation for each of the LLC constants presented in table A.68.

**Table A.68: LLC constants**

Item	Constant	Reference	Status	Support	Values	
					Allowed	Supported
1	N.251	B.2	m		512 bits	
2	N.252	B.2	m		3 frames	

**A.10.3.3 LLC timers**

The supplier of the implementation shall state the support of the implementation for each of the LLC timers presented in table A.69.

**Table A.69: LLC timers**

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
1	T.254, AI trans.	B.1	m		5 s	

**A.10.4 Medium Access Control (MAC)**

The supplier of the implementation shall state the support of the implementation for each of the MAC features presented in table A.70.

**Table A.70: MAC features**

Item	MAC feature	Reference	Status	Support
1	General MAC procedures	22.4	m	
2	Uplink data transfer procedures	22.5	m	
3	Downlink data transfer procedures	22.6	m	
4	Downlink broadcast procedures	22.7	m	
5	Downlink control procedures	22.8	m	

**A.10.4.1 MAC procedures**

The supplier of the implementation shall state the support of the implementation for each of the MAC procedures presented in tables A.71 to A77.

**Table A.71: General MAC procedures**

Item	General MAC procedures	Reference	Status	Support
1	Addressing procedures	22.4.1	m	
2	Random access procedures	22.4.2	m	
3	Control element procedures	22.4.3	m	

**Table A.72: Addressing procedures**

Item	Addressing procedures	Reference	Status	Support
1	Local grouping	22.4.1.3	m	
2	Address filtering	22.4.1.4	m	

**Table A.73: Random access procedures**

Item	Uplink access procedures	Reference	Status	Support
1	Alternative random access methods	22.4.2.1	m	
2	Control of random access	22.4.2.2	m	
3	Layer 2 access priority	22.4.2.3	m	
4	Random access flow control	22.4.2.4	m	

**Table A.74: Uplink data transfer procedures**

Item	Uplink data transfer procedures	Reference	Status	Support
1	Random access procedure	22.5.2	m	
2	Reserved uplink procedures, acknowledged	22.5.3.1	m	
3	Reserved uplink procedures, unacknowledged	22.5.3.2	m	

**Table A.75: Downlink data transfer procedures**

Item	Downlink data transfer procedures	Reference	Status	Support
1	Downlink data transfer procedure	22.6.2	m	
2	Low duty cycle procedures	22.6.3	m	
3	Re-transmission procedures	22.6.4	m	

**Table A.76: Downlink broadcast procedures**

Item	Downlink broadcast procedures	Reference	Status	Support
1	System information procedures	22.7.1,22.7.2	m	
2	Random access procedures	22.7.3	m	

**Table A.77: Downlink control procedures**

Item	Downlink control procedures	Reference	Status	Support
1	Scanning procedures	22.8.1	m	
2	Monitoring procedures	22.8.2	m	
3	Serving cell measuring procedures	22.8.3	m	
4	Radio channel selection procedures	22.8.4	m	
5	L2 address change procedure	22.8.5	m	
6	Energy selection procedure		o	

NOTE: This item is not in ETS 300 393-2, edition 1. As a result, MAC is unable to support this feature on the MM layer. This item may be added in ETS 300 393-2 edition 2, currently being prepared.

**A.10.4.2 MAC constants**

The supplier of the implementation shall state the support of the implementation for each of the MAC constants presented in table A.78.

**Table A.78: MAC constants**

Item	Constant	Reference	Status	Support	Values	
					Allowed	Supported
1	N.206, max retrans. blks	D.2	m		3	
2	N.222, max following blks	D.2	m		40	

**A.10.4.3 MAC timers**

The supplier of the implementation shall state the support of the implementation for each of the MAC timers presented in table A.79.

**Table A.79: MAC timers**

Item	Timer	Reference	Status	Support	Values	
					Allowed	Supported
1	T.201, max access wait	D.1	m		5 s	
2	T.202, max ack wait	D.1	m		5 s	
3	T.204, access retry delay	D.1	m		5 s	
4	T.205, max AA wait	D.1	m		5 s	
5	T.206, max WU wait	D.1	m		3 s	

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