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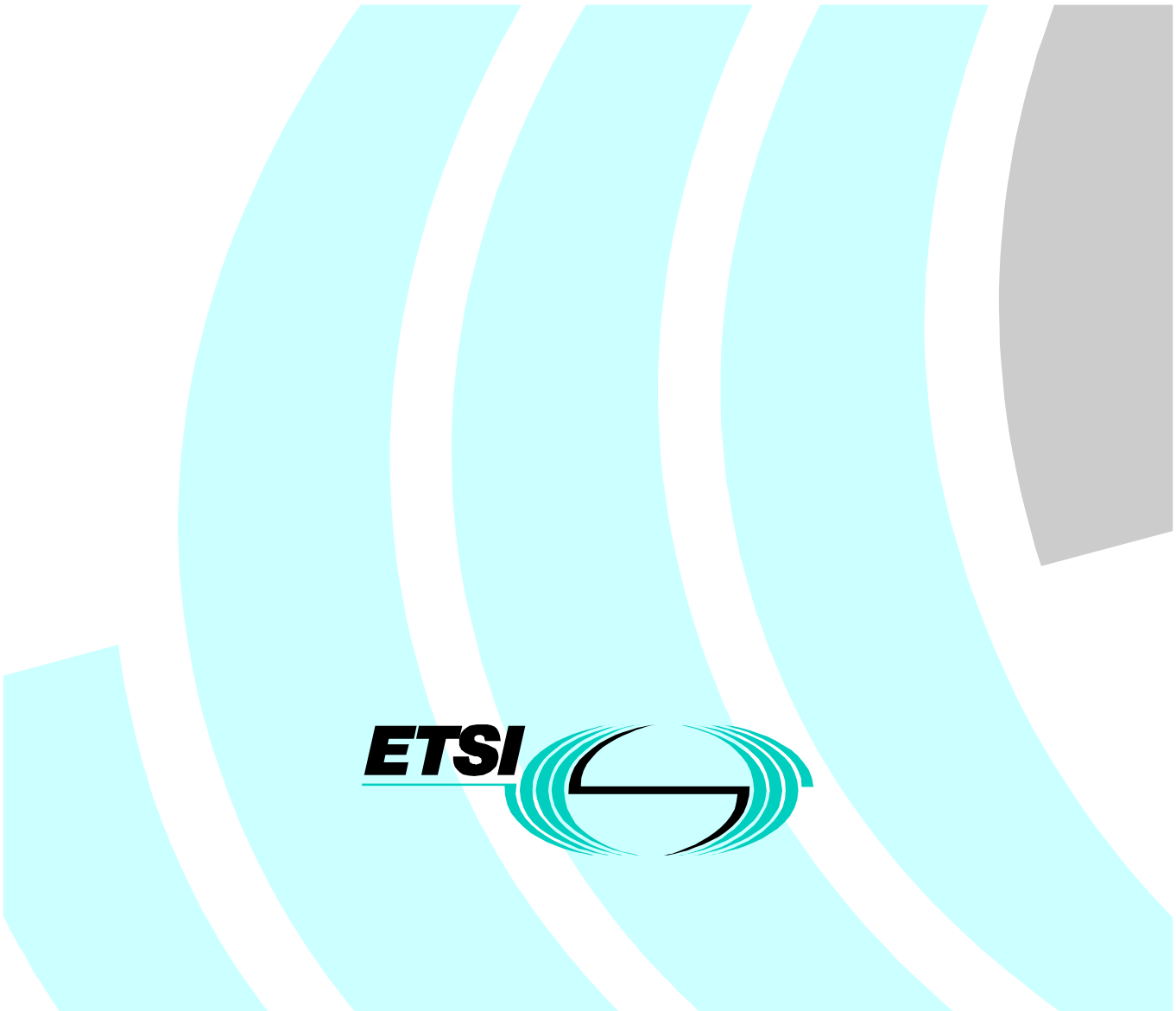
Candidate Harmonized European Standard (Telecommunications series)

Terrestrial Trunked Radio (TETRA); Attachment requirements for TETRA terminal equipment; Part 2: Emergency access



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Contents

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Foreword

This Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Project Terrestrial Trunked Radio (TETRA), and is now submitted for the Public Enquiry phase of the ETSI standards Two-step Approval Procedure.

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	36 months after doa

1 Scope

The present document specifies the technical characteristics to be provided by TErrestrial Trunked Radio (TETRA) terminal equipment, which uses the TETRA technology. It applies only to terminal equipment intended for police and emergency services operating within European harmonized frequency bands in the range 380 MHz to 385 MHz and 390 MHz to 395 MHz.

The objective of the present document is to ensure that no disturbance occurs to the public telecommunications network, to ensure proper inter-working of TETRA terminals with TETRA networks, and TETRA terminal to TETRA terminal so that communication can be routed successfully through the applicable network(s).

In addition to the present document, other Harmonized Standards may apply.

Requirements apply to the network interface and the Radio Frequency (RF) Air Interface of the equipment.

TETRA terminal equipment consists of several elements. The present document is structured to enable the approval of the individual elements as separate items. Because of the need for effective use of the radio spectrum, the essential air interface characteristics will always apply. For each essential requirement a test is given including measurement methods.

In the present document there are no Electromagnetic Compatibility (EMC) requirements in terms of the Terminal Directive 98/13/EC [24], article 5c.

NOTE: Technical requirements for EMC performance are covered by the relevant standards applicable to the EMC Directive 89/336/EEC [26] which also lays down the conformity assessment procedure.

The present document is based on the radio and protocol provisions of ETS 300 392, ETS 300 394 and ETS 300 396.

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ETS 300 392-2 (Ed.2): "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 2: Air Interface (AI)".

[2] ETS 300 392-7 (Ed.2): "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 7: Security".

[3] ETS 300 392-10: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 10: Supplementary services stage 1".

[4] ETS 300 392-11: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 11: Supplementary services stage 2".

[5] ETS 300 392-12: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 12: Supplementary services stage 3".

[6] ETS 300 392-14: "Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D); Part 14: Protocol Implementation Conformance Statement (PICS) proforma specification".

[7] ETS 300 394-1: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 1: Radio".

[8] ETS 300 394-2-1: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 1: Test suite structure and test purposes".

[9] ETS 300 394-2-2: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 2: Abstract Test Suite (ATS) for Network (NWK) layer".

[10] ETS 300 394-2-3: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 3: Abstract Test Suite (ATS) for Logical Link Control (LLC)".

[11] ETS 300 394-2-4: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 2: Protocol testing specification for Voice plus Data (V+D); Sub-part 4: Abstract Test Suite (ATS) for Medium Access Control (MAC)".

[12] ETS 300 394-5-1: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 5: Security; Sub-part 1: Protocol Implementation Conformance Statement (PICS) proforma specification".

[13] ETS 300 394-5-2: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 5: Security; Sub-part 2: Protocol testing specification for TETRA security".

[14] ETS 300 394-5-3: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 5: Security; Sub-part 3: Abstract Test Suite (ATS)".

[15] ETS 300 396-2: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 2: Radio aspects".

[16] ETS 300 396-3: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 3: Mobile Station to Mobile Station (MS-MS) Air Interface (AI) protocol".

[17] ETS 300 396-4: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 4: Type 1 repeater air interface".

[18] ETS 300 396-5: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 5: Gateway air interface".

[19] ETS 300 396-6 (1996): "Terrestrial Trunked Radio (TETRA); Direct Mode Operation (DMO); Part 6: Security".

[20] ETS 300 396-7: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 7: Type 2 repeater air interface".

[21] ETS 300 396-8-1: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 8: Protocol Implementation Conformance Statement (PICS) proforma specification; Sub-part 1: Mobile Station to Mobile Station (MS-MS) Air Interface (AI)".

[22] ETS 300 394-4-1: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 1: Test suite structure and test purposes (TSS&TP) for Mobile Station to Mobile Station (MS-MS) Air Interface (AI)".

[23] ETS 300 394-4-2: "Terrestrial Trunked Radio (TETRA); Conformance testing specification; Part 4: Protocol testing specification for Direct Mode Operation (DMO); Sub-part 2: Abstract Test Suite (ATS) for Mobile Station to Mobile Station (MS-MS) Air Interface (AI)".

[24] Directive 98/13/EC of the European Parliament and of the Council of 12 February 1998 relating to telecommunications terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity.

[25] ISO/IEC 9646-3 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The tree and tabular combined notation". (See also CCITT Recommendation X.292 (1992)).

[26] Council Directive 89/336/EECof 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in ETS 300 392-2 [1] apply.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

Um	TETRA Voice plus Data (V+D) air interface
Ud	TETRA Direct Mode (DM) air interface

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AACH	Access Assignment Channel
ACCH	Associated Control Channel
ATS	Abstract Test Suite
BLCH	Base station Linearization channel
BNCH	Broadcast Network Channel
BS	Base Station
BSCH	Broadcast Synchronization Channel
BV	Behaviour valid
CA	Capability test
Cat.	Category
CC	Call Control
CCK	Common Cipher Key
CLCH	Common Linearization Channel
CM	Circuit Mode
CMCE	Circuit Mode Control Entity
CONP	Connection Oriented Network Protocol
CR	Cell Reselection
CTR	Common Technical Requirement
CU	Channel Usage
DM	Direct Mode
DMCC	Direct Mode Call Control
DMO	Direct Mode Operation
ETS	European Telecommunication Standard
FCS	Frame Check Sequence
GC	Group Call
GCK	Group Cipher Key
GSSI	Group Short Subscriber Identity
HD	Half-slot Down-link
HU	Half-slot Up-link
ID	Idle Channel
ITSI	Individual TETRA Subscriber Identity
IUT	Implementation Under Test

LLC	Logical Link Control
LS	Line Station
MA	MAintenance
MAC	Medium Access Control
MCCH	Main Control Channel
MCM	Minimum Control Mode
MLE	Mobile Link Entity
MM	Mobility Management
MS	Mobile Station
MSMS	Mobile Station to Mobile Station
NCM	Normal Control Mode
NWK	Network layer
OTAR	On The Air Rekeying
PC	Protocol Control
PD	Permanent Disable
PDU	Protocol Data Unit
PEI	Peripheral Equipment Interface
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
RF	Radio Frequency
RO	Receive Occupation
RR	Receive Reservation
RT	Requirements Table
SCCH	Secondary Control Channel
SCH	Signalling Channel
SCK	Static Cipher Key
SCLNP	Specific Connectionless Network Protocol
SDS	Short Data Services
SDU	Service Data Unit
SED	Secure Enable/Disable
SIM	Subscriber Identity Module
SM	Signalling Messages
SS	Supplementary Service
STCH	Stealing Channel
SwMI	Switching and Management Infrastructure
TAR	Target
TCH	Traffic CHannel
TD	Tempory Disable
TEI	TETRA Equipment Identity
TETRA	Terrestrial Trunked Radio
TI	Timer
TM	TETRA MAC layer
TSS	Test Suite Structure
TP	Test Purpose
TR	Transmit Reservation
TTCN	Tree and Tabular Combined Notation
TXO	Transmit Occupation
V+D	Voice and Data

4 Requirements

This clause references the requirements from the standards specifying TETRA. It also contains the justifications for inclusion of the requirements, and a reference to the relevant test to verify compliance with the requirement.

NOTE: This clause does not specify the exact status (e.g. mandatory or optional) of the listed features, services and requirements. This is specified in the Requirements Tables (RT) in annex A.

4.1 Introduction

The following table headings are applicable to the tables in this clause:

Requirement reference: reference to a (sub)clause(s) in the reference specification.

Description: short description of the requirement.

Category (Cat.): category in which the relative item falls under the article 5 in the Council Directive 98/13/EC [24].

The interpretation of category column in all tables is as follows:

- **d** falls under item (d) from Article 5 of Council Directive 98/13/EC [24], "protection of the network from harm";
- **e** falls under item (e) from Article 5 of Council Directive 98/13/EC [24], "effective use of radio frequency spectrum";
- **f** falls under item (f) from Article 5 of Council Directive 98/13/EC [24], "interworking with the network";
- **g** falls under item (g) from Article 5 of Council Directive 98/13/EC [24], "interworking via the network, in justified cases".

NOTE: There are no EMC technical requirements in the present document, which are specific to the equipment in terms of item (c) from Article 5 of Council Directive 98/13/EC [24]. Other technical aspects of EMC performance and testing of the equipment are covered by the relevant requirements of the EMC Directive, 89/336/EEC [26].

Justification: justification for the requirement against the indicated category.

Test method reference: physical layer tables, a test method is referenced for each requirement.

Test case limit value: for physical layer tables, the limit values are indicated for a requirement when applicable.

Test purpose reference: for protocol layer tables, at least one test purpose is referenced for each requirement.

Test case reference: for protocol layer tables, at least one test case is referenced for each requirement.

4.2 Requirements at the Um air interface

4.2.1 Physical layer requirements

This subclause contains the radio layer requirements at the Um air interface.

Table 1: Radio layer requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
5.2	Modulation.	d, e	Incorrect modulation will lead to disturbance of other TETRA users.	-	Implicit by 10.1.3.
6.2	Frequency bands and channel arrangements.	d, e	Incorrect use of frequency bands and channel arrangements may cause unnecessary interference in the radio spectrum.	-	Implicit by 10.2.1/10.2.2
6.4.1.1	BS transmitter output power.	d, e	Maladjustment of the RF output power may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.1.1.2	8.1 and 8.1.2
6.4.1.2	MS transmitter output power.	d, e	Maladjustment of the RF output power may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.1.1.2	8.1 and 8.1.1
6.4.1.2	MS nominal transmitter output power control levels.	d, e	Maladjustment of the RF output power may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.1.1.2	8.1 and 8.1.1
6.4.2.2.1	Unwanted conducted emission over the useful part of the burst.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.3.2	8.3
6.4.2.2.2	Unwanted conducted emission during the switching transients.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.4.2	8.4
6.4.2.3	Unwanted conducted emission far from the carrier.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.5.2	8.5
6.4.2.4	Unwanted conducted emission during CLCH and BLCH.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.7.2	8.7, 8.7.1 and 8.7.2
6.4.2.5	Unwanted conducted emission in the non-transmit state.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.8.2	9.8
6.4.3	Unwanted radiated emissions.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.6.2	8.6
6.4.5	BS output power time mask.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	7.1.1.2	8.1 and 8.1.2
6.4.5	MS output power time mask.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	7.1.1.2	8.1 and 8.1.1

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
6.4.5.1	BS output power in non-active transmit state.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	7.1.2.2	8.2
6.4.5.2	MS output power in non-active transmit state.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	7.1.2.2	8.2
6.4.6.2	BS transmitter intermodulation attenuation.	d, e	A transmitter intermodulation attenuation below an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.8.2.2	8.8 and 8.8.2
6.4.6.3	MS transmitter intermodulation attenuation.	d, e	A transmitter intermodulation attenuation below an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.8.2.1	8.8 and 8.8.1
6.4.7	Intra-BS transmitter intermodulation attenuation.	d, e	A transmitter Intra-BS intermodulation attenuation below an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.8.2.3	8.8 and 8.8.3
6.5.1.2	Blocking characteristics.	e	Insufficient blocking characteristics of the receiver may lead to an unnecessarily high number of radio transmission attempts.	7.2.5.2	9.5, 9.5.1 and 9.5.2
6.5.2.2	Spurious response rejection.	d, e	Insufficient spurious response rejection may lead to an unnecessarily high number of radio transmission attempts.	7.2.6.2	9.6
6.5.3.2	Intermodulation response rejection.	d, e	Insufficient intermodulation response rejection may lead to an unnecessarily high number of radio transmission attempts.	7.2.7.2	9.7, 9.7.1 and 9.7.2
6.5.4.2	Unwanted conducted emission in reception.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.8.2	9.8
6.5.5	Unwanted radiated emission.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.9.2	9.9
6.6.1.2	Modulation accuracy.	e, f	Insufficient modulation accuracy may lead to the transmission of incorrect data.	7.3.1.2	10.1, 10.1.1, 10.1.2 and 10.1.3
6.6.2.1	Nominal error rate.	e, f	An unacceptable nominal error rate may lead to the reception of incorrect data.	7.2.2.2	9.2, 9.2.1 and 9.2.2
6.6.2.2	Dynamic reference sensitivity performance.	e, f	An unacceptable dynamic reference sensitivity performance may lead to the reception of incorrect data.	7.2.3.2	9.3, 9.3.1, 9.3.2 and 9.3.3
6.6.2.2.1	BS dynamic reference sensitivity performance.	e, f	An unacceptable dynamic reference sensitivity performance may lead to the reception of incorrect data.	7.2.3.2	9.3 and 9.3.2
6.6.2.2.2	MS dynamic reference sensitivity performance.	e, f	An unacceptable dynamic reference sensitivity performance may lead to the reception of incorrect data.	7.2.3.2	9.3 and 9.3.1
6.6.2.3	Reference interference performance.	e, f	An unacceptable reference interference performance may lead to the reception of incorrect data.	7.2.4.2	9.4, 9.4.1 and 9.4.2
6.6.2.3.1	BS reference interference performance.	e, f	An unacceptable reference interference performance may lead to the reception of incorrect data.	7.2.4.2	9.4 and 9.4.2
6.6.2.3.2	MS reference interference performance.	e, f	An unacceptable reference interference performance may lead to the reception of incorrect data.	7.2.4.2	9.4 and 9.4.1

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
6.6.2.4	Static reference sensitivity performance.	e, f	An unacceptable static reference sensitivity performance may lead to the reception of incorrect data.	Implicit by 7.2.5.2, 7.2.6.2 and 7.2.7.2	Implicit by 9.5.1, 9.5.2, 9.6, 9.7.1 and 9.7.2.
6.6.2.4.1	BS static reference sensitivity performance.	e, f	An unacceptable static reference sensitivity performance may lead to the reception of incorrect data.	Implicit by 7.2.5.2, 7.2.6.2 and 7.2.7.2	Implicit by 9.5.2, 9.6, and 9.7.2.
6.6.2.4.2	MS static reference sensitivity performance.	e, f	An unacceptable static reference sensitivity performance may lead to the reception of incorrect data.	Implicit by 7.2.5.2, 7.2.6.2 and 7.2.7.2	Implicit by 9.5.1, 9.6 and 9.7.1.
6.6.2.5	MS receiver performance for synchronization burst acquisition.	d, e	An insufficient synchronization burst acquisition may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
7.4	Timing of transmitted signal.	d, e	An insufficient synchronization may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
7.5	BS requirement for synchronization.	d, e	An insufficient synchronization may cause unnecessary interference in the radio spectrum.	7.3.2.2	10.2 and 10.2.2
7.6	MS requirement for synchronization.	d, e	An insufficient synchronization may cause unnecessary interference in the radio spectrum.	7.3.2.2 and 7.3.4.2	10.2, 10.2.1 and 10.4
9.5.2	Mapping of BCCH and CLCH.	d, e	Incorrect mapping of BCCH and CLCH may cause interference with other users.	-	Implicit by MAC layer testing.
9.5.3	Mapping of SCH.	d, e	Incorrect mapping of SCH may cause interference with other users.	-	Implicit by MAC layer testing.
9.5.4	Mapping of TCH and STCH.	d, e	Incorrect mapping of TCH and STCH may cause interference with other users.	-	Implicit by CMCE layer testing.
9.5.5	Mapping of AACH.	d, e	Incorrect mapping of AACH may cause interference with other users.	-	Implicit by MAC layer testing.
10.2	RF power control.	d, e, f	An insufficient RF power control may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.3.5.2	10.5
10.3.1	Received signal strength.	d, e, f	If the received signal strength is not measured sufficiently accurate this may lead to a maladjustment of the RF output power and thus either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.3.5.2	10.5
23.4.4.2	MS open loop power control.	d, e, f	An insufficient RF power control may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.3.5.2	10.5
ETS 300 394-1 [7], subclause 6.2.2	Extreme ambient temperatures.	d, e, f	Equipment, which is not supposed to operate in a controlled environment, may cause unnecessary interference in the radio spectrum, if the requirements to output power, adjacent channel power and reference sensitivity are not fulfilled at extreme temperatures.	-	Implicit by test of output power, adjacent channel power and reference sensitivity.

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
NOTE 1: The requirements are specified in ETS 300 392-2 [1] under the given subclause, except when otherwise stated. NOTE 2: The test case limit values are specified in ETS 300 394-1 [7], clause 7. NOTE 3: The test methods are specified in ETS 300 394-1 [7], clauses 8 to 10.					

In addition to the requirements specified in table 1, the following applies for the TETRA V+D emergency access for the frequency bands and channel arrangements defined in subclause 6.2 of ETS 300 392-2 [1]:

- the band 380 MHz to 385 MHz shall be supported for the uplink RF carrier frequencies;
- the band 390 MHz to 395 MHz shall be supported for the downlink RF carrier frequencies.

The duplex spacing, D shall be 10 MHz.

The requirements for frequency bands and channel arrangements are tested implicitly.

4.2.2 Layer 2 requirements

This subclause contains the layer 2 requirements at the Um air interface for MS.

Table 2: Lower MAC layer requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference	Test case reference (note 2)
8.3.1	Error control scheme for Access Assignment CHannel (AACH).	d, e	Incorrect decoding of AACH may cause interference with other users.	-	Implicit by Upper MAC layer testing.
8.3.2	Error control scheme for Broadcast Synchronization CHannel (BSCH).	d, e	Incorrect decoding of BSCH may cause interference with other users.	-	Implicit by Upper MAC layer testing.
8.3.4.1	Error control scheme for mapping onto Half-bursts on the Downlink (SCH/HD), Broadcast Network CHannel (BNCH) and STealing Channel (STCH).	d, e	Incorrect decoding of BNCH may cause interference with other users. Incorrect coding/decoding of SCH/HD and STCH may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
8.3.4.2	Error control scheme for Signalling CHannel for mapping onto Half-bursts on the Uplink (SCH/HU).	e	Incorrect coding of SCH/HU may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
8.3.4.3	Error control scheme for Signalling CHannel for mapping onto Full-bursts (SCH/F).	d, e	Incorrect coding/decoding of SCH/F may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause. NOTE 2: The test cases, as referenced, are specified in ETS 300 394-2-4 [11], annex A.					

Table 3: Upper MAC layer requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
23.3.1.1	Receiving and decoding of messages on the downlink MCCH.	e, f	Incorrect reception and decoding of the MCCH may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.3.1.3	Receiving messages on the ACCH.	e, f	Incorrect reception of messages on the ACCH may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by CMCE layer testing.
23.3.3.1	Beginning of minimum mode.	e	Incorrect detection of minimum mode operation may cause unwanted transmission attempts.	TP/MAC/BV/MI-01, TP/MAC/BI/MI-01	MAC_BV_MI_01, MAC_BI_MI_01
23.3.3.2	MS operation during frames 1-17 in minimum mode.	e, f	Incorrect operation during minimum mode may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/MI-01	MAC_BV_MI_01
23.3.3.3	MS operation during frame 18 in minimum mode.	e, f	Incorrect operation during minimum mode may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/MI-01	MAC_BV_MI_01
23.3.3.5	End of minimum mode.	e, f	Incorrect detection of end of minimum mode may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/MI-02	MAC_BV_MI_02
23.4.1.2.1	Recognition of destination address in downlink messages.	e, f	Incorrect recognition of destination address may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.4.1.2.2	Source address in uplink messages.	e, f	Use of incorrect source address may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.4.2.1.2	Transmission of TM-SDU not requiring fragmentation.	e, f	Incorrect transmission of TM-SDU not requiring fragmentation may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/CA-01	MAC_CA_01
23.4.2.1.2	Fragmentation of uplink TM-SDU, when a transmission starts in a full slot granted by the BS.	e, f	Incorrect fragmentation may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/RE-01	MAC_BV_RE_01
23.4.2.1.2	Fragmentation of uplink TM-SDU, using random access to start the process.	e, f	Incorrect fragmentation may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/RE-03	MAC_BV_RE_03
23.4.2.2	Fill bit addition.	e, f	Incorrect addition of fill bits may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.4.3.1.1	Reception of unfragmented TM-SDU.	e, f	Incorrect reception of unfragmented TM-SDU may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/CA-01	MAC_CA_01

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
23.4.3.1.1	Reception of fragmented TM-SDU.	e, f	Incorrect reception of fragmented TM-SDU may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/RA-01	MAC_BV_RA_01
23.4.3.2	Fill bit deletion.	e, f	Incorrect deletion of fill bits may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.4.3.3	PDU dissociation.	e, f	Incorrect PDU disassociation may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.5.1.4.2	Reception of ACCESS-ASSIGN PDU.	d, e, f	Incorrect reception of the ACCESS-ASSIGN PDU may cause interference with other users and unwanted transmission attempts.	-	Implicit by MAC layer testing.
23.5.1.4.3	Initiating a random access.	e, f	Incorrect random access transmission may cause unwanted transmission attempts or prevent transfer of upper layer messages.	-	Implicit by MAC layer testing.
23.5.1.4.4	Checking for appropriate access code.	e, f	Incorrect checking for access code may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BI/RA-01	MAC_BI_RA_01
23.5.1.4.5	First try procedure.	e, f	Incorrect first try procedure may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BI/RA-02, TP/MAC/TI-02	MAC_BI_RA_02, MAC_TI_02
23.5.1.4.8	Re-try procedure.	e, f	Incorrect re-try procedure may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BI/RA-02, TP/MAC/TI-02	MAC_BI_RA_02, MAC_TI_02
23.5.1.4.9	Abandoning random access attempt.	e	Incorrect abandoning of random access may cause unwanted transmission attempts.	TP/MAC/BI/RA-02	MAC_BI_RA_02
23.5.2.1	Reservation requirement.	e, f	Incorrect reservation of transmission capacity may cause unwanted transmission attempts or prevent transfer of upper layer messages.	TP/MAC/BV/RE-01, TP/MAC/BV/RE-03	MAC_BV_RE_01, MAC_BV_RE_03
23.5.2.2	Slot granting.	d, e, f	Incorrect recognition of granted slots may cause interference with other users, loss of radio spectrum capacity or prevent transfer of upper layer messages.	TP/MAC/BV/RE-01, TP/MAC/BV/RE-02, TP/MAC/BV/RE-03	MAC_BV_RE_01, MAC_BV_RE_02, MAC_BV_RE_03
23.5.4.2	Replace current channel with specified channel.	d, e, f	Incorrect reception of channel allocation commands may cause interference with other users or prevent transfer of upper layer messages.	-	Implicit by MLE layer testing.
23.5.4.2	Quit current channel and go to specified channel.	d, e, f	Incorrect reception of channel allocation commands may cause interference with other users or prevent transfer of upper layer messages.	-	Implicit by MLE layer testing.
23.5.4.2	Replace current channel with specified channel, plus MCCH/SCCH or CSS.	d, e, f	Incorrect reception of channel allocation commands may cause interference with other users or prevent transfer of upper layer messages.	-	Implicit by MLE layer testing.
23.6.1	Reception and decoding of BNCH and BSCH.	d, e, f	Incorrect reception and decoding of BNCH and BSCH may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
23.6.2	Acquiring cell synchronization.	d, e, f	Incorrect cell synchronization may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
23.6.3	Acquiring network information.	d, e, f	Incorrect decoding of network information may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
23.7.1.1	Path loss parameter C1 calculation.	e, f	Incorrect path loss calculation may prevent attachment or cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.7.1.2	Path loss parameter C2 calculation.	e, f	Incorrect path loss calculation may cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.7.3.1	Downlink measurements.	e, f	Incorrect downlink measurements may prevent attachment or cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.7.4.2	Monitoring measurements.	e, f	Incorrect monitoring measurements may cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.7.4.3	Signal strength measurements.	e, f	Incorrect signal strength measurements may prevent attachment or cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.7.5.2	Scanning measurements.	e, f	Incorrect scanning measurements may cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	-	Implicit by MLE layer testing.
23.8.2.2	Timing of change of mode.	e, f	Incorrect timing of change of mode may cause interference with other users or prevent transfer of upper layer messages.	-	Implicit by CMCE layer testing.
23.8.4.1.1	Transmission of uplink stealing.	e, f	Incorrect implementation of stealing may cause unnecessary transmission attempts or prevent transfer of upper layer traffic.	-	Implicit by CMCE layer testing.
23.8.4.2.2	Reception of downlink stealing.	e, f	Incorrect implementation of stealing may cause unnecessary transmission attempts or prevent transfer of upper layer traffic.	-	Implicit by CMCE layer testing.

NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-2-1 [8], clause 8.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-2-4 [11], annex A.

Table 4: LLC layer requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
22.3.2.1	Initial basic link data transmission.	e, f	Incorrect SDU-number usage in initial transmission may cause unnecessary transmission attempts over the air interface and may prevent registration.	TP/LLC/CA/BA-01	LLC_CA_BA_01
22.3.2.3	Acknowledged basic link data transmission.	e, f	Incorrect PDU-type in transmission may cause unwanted transmission attempts or prevent data transfer of upper layer messages.	TP/LLC/CA/BA-02	LLC_CA_BA_02
22.3.2.3	FCS calculation in transmission in acknowledged basic link.	e	Incorrect FCS calculation will cause unnecessary transmission attempts.	TP/LLC/CA/BA-06	LLC_CA_BA_06
22.3.2.3	SDU numbering in transmission in acknowledged basic link.	e	Incorrect SDU-number incrementation may cause unnecessary transmission attempts.	TP/LLC/BV/BA-01	LLC_BV_BA_01
22.3.2.3	Acknowledgement transmission in acknowledged basic link.	e	Failing acknowledgement transmission will cause unnecessary transmission attempts.	TP/LLC/CA/BA-07, TP/LLC/CA/BA-08, TP/LLC/CA/BA-09	LLC_CA_BA_07, LLC_CA_BA_08, LLC_CA_BA_09
22.3.2.3	Retransmission counts based on parameter N.252 in acknowledged basic link.	e	Incorrect implementation of parameter N.252 may cause unnecessary transmission attempts.	TP/LLC/BV/BA-02	LLC_BV_BA_02
22.3.2.3	Retransmission in acknowledged basic link based on timer T.251.	e	Incorrect implementation of timer T.251 may cause unnecessary transmission attempts.	TP/LLC/TI/BA-01	LLC_TI_BA_01
22.3.2.3	Acknowledgement reception in acknowledged basic link.	e	Failing acknowledgement reception will cause unnecessary transmission attempts.	TP/LLC/CA/BA-03, TP/LLC/CA/BA-04, TP/LLC/CA/BA-05	LLC_CA_BA_03, LLC_CA_BA_04, LLC_CA_BA_05
22.3.2.3	SDU numbering in reception in acknowledged basic link.	e	Incorrect interpretation of SDU-numbers in reception will cause unnecessary transmission attempts.	TP/LLC/BV/BA-03	LLC_BV_BA_03
22.3.2.3	FCS checking in reception in acknowledged basic link.	e	Incorrect FCS checking in reception will cause unnecessary transmission attempts.	TP/LLC/BI/BA-01	LLC_BI_BA_01
22.3.2.4.2	Basic link unacknowledged data reception.	e, f	To guarantee basic reliable data transfer for upper layers as basis for group addressing and thereby efficient usage of radio frequency spectrum.	TP/LLC/CA/BU-03	LLC_CA_BU_03
22.3.2.4.2	FCS checking in reception in unacknowledged basic link.	e	Incorrect FCS checking in reception may cause unnecessary transmission attempts on the upper layers.	TP/LLC/BI/BU-01, TP/LLC/CA/BU-04	LLC_BI_BU_01, LLC_CA_BU_04

NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-2-1 [8], clause 7.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-2-3 [10], annex A.

4.2.3 Layer 3 requirements

This subclause contains the layer 3 requirements at the Um air interface for MS.

Table 5: MLE protocol requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
18.3.4.6	Initial cell selection.	e, f	Incorrectly implemented initial cell selection may cause unnecessary transmission attempts and prevent attachment.	TP/NWK/MLE/CA/CR-01	NWK_MLE_CA_CR_01
18.3.4.7.2	Undeclared cell re-selection.	e, f	Incorrectly implemented undeclared cell re-selection may cause unnecessary registration attempts and prevent attachment.	TP/NWK/MLE/CA/CR-02	NWK_MLE_CA_CR_02
18.3.4.7.3	Unannounced cell re-selection.	e, f	Incorrectly implemented unannounced cell re-selection may prevent attachment or cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	TP/NWK/MLE/CA/CR-03, TP/NWK/MLE/BV/CR-01, TP/NWK/MLE/BV/CR-02, TP/NWK/MLE/BV/RE-01, TP/NWK/MLE/BV/RE-03	NWK_MLE_CA_CR_03, NWK_MLE_BV_CR_01, NWK_MLE_BV_CR_02, NWK_MLE_BV_RE_01, NWK_MLE_BV_RE_03
18.3.4.7.4	Announced type 3 cell re-selection.	e, f	Incorrectly implemented announced type 3 cell re-selection may prevent attachment or cause defective call restoration resulting in unnecessary transmission attempts or unwanted traffic channel allocation.	TP/NWK/MLE/CA/CR-04, TP/NWK/MLE/BV/CR-03, TP/NWK/MLE/TI-01, TP/NWK/MLE/TI-02	NWK_MLE_CA_CR_04, NWK_MLE_BV_CR_03, NWK_MLE_TI_01, NWK_MLE_TI_02
18.3.6.5	Usage of neighbour cell enquiry.	e	Incorrect BS service details element interpretation in reception may cause disallowed transmission attempts.	TP/NWK/MLE/BV/NB-02	NWK_MLE_BV_NB_02

NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-2-1 [8], clause 6.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-2-2 [9], annex A.

Table 6: MM protocol requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
16.4.1.1	MLE initiated normal registration.	e, f	Incorrectly implemented MLE initiated normal registration may prevent attachment, cause unnecessary registration attempts, and cause disallowed L3 transmission attempts. Additional requirements for attachment/detachment of group identities apply when this operation is performed within registration.	TP/NWK/MM/BV/RE-02	NWK_MM_BV_RE _02
16.4.2	User application initiated registration.	e, f	Incorrect implementation of user application initiated registration may cause unnecessary registration attempts or prevent attachment to a network, and cause disallowed L3 transmission attempts. Additional requirements for attachment/detachment of group identities apply when this operation is performed within registration.	TP/NWK/MM/CA-02, TP/NWK/MM/CA-03, TP/NWK/MM/BV/RE-01	NWK_MM_CA_02, NWK_MM_CA_03, NWK_MM_BV_RE_01
16.4.3	Infrastructure initiated registration.	e, f	Incorrectly implemented infrastructure initiated registration may cause unnecessary traffic channel allocation, and disallowed L3 transmission attempts. Additional requirements for attachment/detachment of group identities apply when this operation is performed within registration.	TP/NWK/MM/BV/RE-07,	NWK_MM_BV_RE_07
16.8.1	Infrastructure initiated attachment of group identities.	e, f	Incorrect group identity attachment may cause unnecessary traffic channel allocation and partially prevent interworking.	TP/NWK/MM/BV/AT-01	NWK_MM_BV_AT_01
16.8.1	Infrastructure initiated detachment of group identities.	e, f	Incorrectly implemented group identity detachment may cause unwanted L3 transmission attempts and partially prevent interworking.	TP/NWK/MM/BV/AT-02	NWK_MM_BV_AT_02
16.8.2	MS initiated attachment of group identities.	e, f	Incorrect group identity attachment may cause unnecessary traffic channel allocation and partially prevent interworking.	TP/NWK/MM/BV/AT-03	NWK_MM_BV_AT_03
16.8.2	MS initiated detachment of group identities.	e, f	Incorrectly implemented group identity detachment may cause unwanted L3 transmission attempts and partially prevent interworking.	TP/NWK/MM/BV/AT-04	NWK_MM_BV_AT_04

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause. NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-2-1 [8], clause 6. NOTE 3: The test cases, as referenced, are specified in ETS 300 394-2-2 [9], annex A.					

Table 7: CMCE protocol requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
14.5.1.1.1	Incoming individual call set-up.	e, f	To avoid unnecessary traffic channel allocation and to ensure correct interworking with and through the network.	TP/NWK/CMCE/IC/CA/SU-01, TP/NWK/CMCE/IC/CA/SU-02, TP/NWK/CMCE/IC/CA/SU-03	NWK_CMCE_IC_CA_SU_01, NWK_CMCE_IC_CA_SU_02, NWK_CMCE_IC_CA_SU_03
14.5.1.1.2	Outgoing individual call set-up.	e, f	Incorrectly implemented outgoing call set-up may cause unnecessary call set-up attempts and prevent interworking.	TP/NWK/CMCE/IC/CA/SU-04, TP/NWK/CMCE/IC/BV/OC-01, TP/NWK/CMCE/IC/BV/OC-02, TP/NWK/CMCE/IC/CA/SU-05, TP/NWK/CMCE/IC/BV/OC-03	NWK_CMCE_IC_CA_SU_04, NWK_CMCE_IC_BV_OC_01, NWK_CMCE_IC_BV_OC_02, NWK_CMCE_IC_CA_SU_05, NWK_CMCE_IC_BV_OC_03
14.5.1.1.3	Colliding individual call set-up.	e, f	Incorrect implementation of colliding call set-up procedure may cause unnecessary traffic channel allocation in the network and prevent interworking.	TP/NWK/CMCE/IC/BV/CC-01, TP/NWK/CMCE/IC/BV/CC-02	NWK_CMCE_IC_BV_CC_01, NWK_CMCE_IC_BV_CC_02
14.5.1.2.1	Transmission control in individual call.	e, f	Incorrect implementation of transmission control may lead into radio interference, interference with other users, and unnecessary and disallowed transmission attempts. Incorrect information of the transmission status may prevent interworking.	TP/NWK/CMCE/IC/BV/MA/TC-01, TP/NWK/CMCE/IC/BV/MA/TC-02, TP/NWK/CMCE/IC/BV/MA/TC-03, TP/NWK/CMCE/IC/BV/MA/TC-04, TP/NWK/CMCE/IC/BV/MA/TC-05, TP/NWK/CMCE/IC/BV/MA/TC-06	NWK_CMCE_IC_BV_MA_TC_01, NWK_CMCE_IC_BV_MA_TC_02, NWK_CMCE_IC_BV_MA_TC_03, NWK_CMCE_IC_BV_MA_TC_04, NWK_CMCE_IC_BV_MA_TC_05, NWK_CMCE_IC_BV_MA_TC_06
14.5.1.2.4	Individual call restoration.	e	Incorrectly implemented call restoration may lead into unnecessary traffic channel allocation in the network and cause unnecessary transmission attempts.	-	Implicit by MLE protocol testing.
14.5.1.3.1	Individual call disconnection.	e, f	To ensure, that MS disconnects the call enabling the network to deallocate the traffic channel used and to ensure interworking.	TP/NWK/CMCE/IC/CA/CD-01	NWK_CMCE_IC_CA_CD_01
14.5.1.3.3	Reception of disconnection request in individual call.	e, f	To ensure, that MS disconnects the call enabling the network to deallocate the traffic channel used and to ensure interworking.	TP/NWK/CMCE/IC/CA/CD-02, TP/NWK/CMCE/IC/CA/CD-03	NWK_CMCE_IC_CA_CD_02, NWK_CMCE_IC_CA_CD_03

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
14.5.1.3.4	Expiry of call related timers resulting in disconnection in individual calls.	e, f	To ensure, that MS disconnects the call enabling the network to deallocate the traffic channel used and to ensure interworking.	TP/NWK/CMCE/IC/TI-01, TP/NWK/CMCE/IC/TI-02, TP/NWK/CMCE/IC/TI-03, TP/NWK/CMCE/IC/TI-04, TP/NWK/CMCE/IC/TI-05, TP/NWK/CMCE/IC/TI-06, TP/NWK/CMCE/IC/TI-07, TP/NWK/CMCE/IC/TI-08, TP/NWK/CMCE/IC/TI-10, TP/NWK/CMCE/IC/TI-13	NWK_CMCE_IC_TI_01, NWK_CMCE_IC_TI_02, NWK_CMCE_IC_TI_03, NWK_CMCE_IC_TI_04, NWK_CMCE_IC_TI_05, NWK_CMCE_IC_TI_06, NWK_CMCE_IC_TI_07, NWK_CMCE_IC_TI_08, NWK_CMCE_IC_TI_10, NWK_CMCE_IC_TI_13
14.5.1.3.4	Expiry of call related timers resulting in call release in individual calls.	e	Incorrect implementation of call release procedures may lead in disallowed transmission requests.	TP/NWK/CMCE/IC/TI-11, TP/NWK/CMCE/IC/TI-12	NWK_CMCE_IC_TI_11, NWK_CMCE_IC_TI_12
14.5.1.4	U-plane switching in individual call.	e	Incorrectly implemented U-plane switching may cause radio interference and interference with other users.	TP/NWK/CMCE/IC/BV/MA/TC-06	NWK_CMCE_IC_BV_MA_TC_06
14.5.2.1.2	Outgoing group call set-up.	e, f	Incorrectly implemented outgoing call set-up may cause unnecessary call set-up attempts and prevent interworking.	TP/NWK/CMCE/GC/CA/SU-01, TP/NWK/CMCE/GC/BV/OC-01	NWK_CMCE_GC_CA_SU_01, NWK_CMCE_GC_BV_OC_01
14.5.2.1.3	Colliding group call set-up.	e, f	Incorrect implementation of colliding call set-up procedure may cause unnecessary traffic channel allocation in the network and prevent interworking.	TP/NWK/CMCE/GC/BV/CC-01	NWK_CMCE_GC_BV_CC_01
14.5.2.2.1	Transmission control in group call.	e, f	Incorrect implementation of transmission control may lead into radio interference, interference with other users, and unnecessary and disallowed transmission attempts. Incorrect information of the transmission status may prevent interworking.	TP/NWK/CMCE/GC/BV/MA/TC-01, TP/NWK/CMCE/GC/BV/MA/TC-02, TP/NWK/CMCE/GC/BV/MA/TC-03, TP/NWK/CMCE/GC/BV/MA/TC-04, TP/NWK/CMCE/GC/BV/MA/TC-05, TP/NWK/CMCE/GC/BV/MA/TC-06, TP/NWK/CMCE/GC/BV/MA/TC-07	NWK_CMCE_GC_BV_MA_TC_01, NWK_CMCE_GC_BV_MA_TC_02, NWK_CMCE_GC_BV_MA_TC_03, NWK_CMCE_GC_BV_MA_TC_04, NWK_CMCE_GC_BV_MA_TC_05, NWK_CMCE_GC_BV_MA_TC_06, NWK_CMCE_GC_BV_MA_TC_07
14.5.2.2.4	Group call restoration.	e	Incorrectly implemented call restoration may lead into unnecessary traffic channel allocation in the network and cause unnecessary transmission attempts.	TP/NWK/CMCE/GC/BV/MA/CR-01	NWK_CMCE_GC_BV_MA_CR_01
14.5.2.3.3	Network initiated group call disconnection.	e, f	To ensure, that MS disconnects the call enabling the network to deallocate the traffic channel used and to ensure interworking.	TP/NWK/CMCE/GC/CA/CD-01 TP/NWK/CMCE/GC/BV/CD-01	NWK_CMCE_GC_CA_CD_01 NWK_CMCE_GC_BV_CD_01

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
14.5.2.3.5	Expiry of call related timers resulting in disconnection in group calls.	e, f	To ensure, that MS disconnects the call enabling the network to deallocate the traffic channel used and to ensure interworking.	TP/NWK/CMCE/GC/TI-02 TP/NWK/CMCE/GC/TI-03	NWK_CMCE_GC_TI_02 NWK_CMCE_GC_TI_03
14.5.2.3.5	Expiry of call related timers resulting in call release in group calls.	e	Incorrect implementation of call release procedures may lead in disallowed transmission requests.	TP/NWK/CMCE/GC/TI-01 TP/NWK/CMCE/GC/TI-04 TP/NWK/CMCE/GC/TI-05 TP/NWK/CMCE/GC/TI-06 TP/NWK/CMCE/GC/TI-07	NWK_CMCE_GC_TI_01 NWK_CMCE_GC_TI_04 NWK_CMCE_GC_TI_05 NWK_CMCE_GC_TI_06 NWK_CMCE_GC_TI_07
14.5.2.4	U-plane switching in group call.	e	Incorrectly implemented U-plane switching may cause radio interference and interference with other users.	TP/NWK/CMCE/GC/BV/MA/TC-06, TP/NWK/CMCE/GC/TI-07	NWK_CMCE_GC_BV_MA_TC-06, NWK_CMCE_GC_TI_07
14.5.2.5	Acceptance of group- addressed channel allocation	e	Incorrect implementation of the channel allocation reception may cause radio interference and interference with other users.	-	Implicit by group call set-up and maintenance function testing.
NOTE 1: The requirements are specified in ETS 300 392-2 [1], under the given subclause. NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-2-1 [8], clause 6. NOTE 3: The test cases, as referenced, are specified in ETS 300 394-2-2 [9], annex A.					

4.2.4 Security requirements

This subclause contains the security requirements at the Um air interface for MS.

Table 8: Security requirements at the Um air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
4.2.5	Encrypted Short Identity mechanism	e,f	To guarantee reliable signalling when security class 2 or 3 is used, and thereby efficient usage of radio frequency spectrum.	-	Implicit by other security testing.
4.4.2.1	Authentication of a MS by SwMI.	e, f	Incorrect authentication of the terminal will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/II/01	Sec_VD_AU_BV_II_01
4.4.2.2	Authentication of a SwMI by MS.	e, f	Incorrect authentication of the SwMI will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/TI/01	Sec_VD_AU_BV_TI_01
4.4.2.3	Mutual authentication of MS and SwMI initiated by SwMI.	e, f	Incorrect authentication will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/II/02	Sec_VD_AU_BV_II_02
4.4.2.4	Mutual authentication of MS and SwMI initiated by MS.	e, f	Incorrect authentication will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/TI/02	Sec_VD_AU_BV_TI_02
4.4.2.5	Authentication of an MS by SwMI during registration.	e, f	Incorrect authentication of the terminal will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/REG/01	Sec_VD_AU_BV_REG_01
4.4.2.6	Authentication of a SwMI by MS during registration.	e, f	Incorrect authentication of the SwMI will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/REG/02	Sec_VD_AU_BV_REG_02
4.4.2.7	Mutual authentication of MS and SwMI initiated by MS during registration.	e, f	Incorrect authentication will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/REG/TEI/03	Sec_VD_AU_REF_TEI_03

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
4.4.2.8	Mutual authentication of MS and SwMI initiated by SwMI during registration.	e, f	Incorrect authentication will prevent call establishment and access to other services, cause unwanted registration attempts, and may cause misuse of traffic channels.	TP/Sec_VD/AU/BV/REG/TEI/04	Sec_VD_AU_REF_TEI_04
4.4.3.1	Key transfer mechanism for CCK initiated by SwMI.	e, f	Incorrect Common Cipher Key (CCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in individual and group calls.	TP/Sec_VD/OTAR/BV/CCK/01	Sec_VD_OTAR_BV_CCK_01
4.4.3.2	Key transfer mechanism for CCK initiated by MS.	e, f	Incorrect Common Cipher Key (CCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in individual and group calls.	TP/Sec_VD/OTAR/BV/CCK/03	Sec_VD_OTAR_BV_CCK_03
4.4.4.1	Key transfer mechanism for SCK requested by MS.	e, f	Incorrect Static Cipher Key (SCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in individual calls.	-	Implicit by other security tests.
4.4.4.2	Key transfer mechanism for SCK initiated by SwMI.	e, f	Incorrect Static Cipher Key (SCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in individual calls.	TP/Sec_VD/OTAR/BV/SCK/02	Sec_VD_OTAR_BV_SCK_01
4.4.5.1	Key transfer mechanism for GCK requested by MS.	e, f	Incorrect Group Cipher Key (GCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in group calls.	TP/Sec_VD/OTAR/BV/GCK/01	Sec_VD_OTAR_BV_GCK_01
4.4.5.2	Key transfer mechanism for GCK initiated by SwMI.	e, f	Incorrect Group Cipher Key (GCK) reception may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in group calls.	TP/Sec_VD/OTAR/BV/GCK/02	Sec_VD_OTAR_BV_GCK_02

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
4.4.6	Notification of key change	e,f	Incorrect handling of key change notifications may prevent correct interworking with the network, prevent access to network services, and cause misuse of traffic channels preventing effective use of radio frequency spectrum in individual and group calls.	-	Implicit by testing of key transfer mechanism.
5.4.3.1	Permanent disabling of an MS using authentication.	e	Incorrect MS operation when permanently disabled may cause disallowed transmission attempts. Disabling of equipment provides mechanism to prevent defective MS loading the network whilst disabling the user prevents unauthorized use of the network.	TP/Sec_VD/SED/PD/02	Sec_VD_ SED_BV_PD_02
5.4.3.1	Temporary disabling of an MS using authentication.	e	Incorrect MS operation when temporarily disabled may cause disallowed transmission attempts. Disabling of equipment provides mechanism to prevent defective MS loading the network whilst disabling the user prevents unauthorized use of the network.	-	Implicit by enabling testing
5.4.5	Temporary disabling of an MS without authentication.	e	Incorrect MS operation when temporarily disabled may cause disallowed transmission attempts. Disabling of equipment provides mechanism to prevent defective MS loading the network whilst disabling the user prevents unauthorized use of the network.	-	Implicit by enabling testing
5.4.3.2	Enabling an MS using authentication.	e	Incorrectly implemented enabling procedure may result in disallowed transmission attempts and unnecessary traffic channel allocation.	TP/Sec_VD/SED/BV/EN/01	Sec_VD_SED_BV_EN_01
5.4.4	Enabling an MS without authentication.	e	Incorrectly implemented enabling procedure may result in disallowed transmission attempts and unnecessary traffic channel allocation.	TP/Sec_VD/SED/BV/EN/05	Sec_VD_SED_BV_EN_05
6.4	Air interface encryption.	e, f	Incorrectly implemented air interface encryption may prevent interworking with the network and cause misuse of traffic and signalling channels.	-	Implicit by CC testing (note 4).

NOTE 1: The requirements are specified in ETS 300 392-7 [2], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-5-2 [13], clause 6.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-5-3 [14], annex A.
NOTE 4: For the CC testing of the terminals supporting security, the supported security features shall be enabled.

4.2.5 Other entities at the Um air interface

There are no essential requirements for:

- any of the Supplementary Services (SSs), ETS 300 392-10 [3], ETS 300 392-11 [4], and ETS 300 392-12 [5];
- TETRA Connection Oriented Network Protocol (CONP), ETS 300 392-2 [1], clause 25;
- TETRA Specific Connectionless Network Protocol (SCLNP), ETS 300 392-2 [1], clause 27.

4.3 Requirements at the Ud air interface

4.3.1 Mobile station to mobile station air interface protocol

4.3.1.1 Physical layer requirements

This subclause contains the radio layer requirements for the mobile station to mobile station air interface.

Table 9: MS-MS Radio layer requirements at the Ud air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
5.2	Modulation.	d, e	Incorrect modulation will lead to disturbance of other TETRA users.	-	Implicit by 10.1.3.
6.2	Frequency bands and channel arrangements	d, e	Incorrect use of frequency bands and channel arrangements may cause unnecessary interference in the radio spectrum.	-	Implicit by F.6.4.3
6.4.2	Transmitter output power.	d, e	Maladjustment of the RF output power may either cause unnecessary interference in the radio spectrum or decrease the probability of successful radio connections.	7.1.1.2 a) and F.5, table F.2	8.1, 8.1.1 a), b) b2), c) and d) and F.4, table F.1
6.4.3.2.1	Unwanted conducted emission over the useful part of the burst.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.3.2	8.3 and F.4, table F.1
6.4.3.2.2	Unwanted conducted emission during the switching transients.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.4.2	8.4
6.4.3.3.1	Unwanted conducted discrete spurious emission far from the carrier.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.5.2 and F.5, table F.2	8.5
6.4.3.3.2	Unwanted conducted wideband noise emission far from the carrier.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.5.2 and F.5, table F.2	8.5
6.4.3.4	Unwanted conducted emission during LCH.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.7.2	8.7, and 8.7.1
6.4.3.5	Unwanted conducted emission in the non-transmit state.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.8.2	9.8
6.4.4	Unwanted radiated emissions.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.6.2	8.6
6.4.6	RF output power time mask.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	F.6.2.1	F.6.2.2
6.4.6	RF output power in non-active transmit state.	e	A violation of the given RF power time mask may lead to unnecessary interference in the radio spectrum.	7.1.2.2	8.2
6.4.7.2	Transmitter intermodulation attenuation.	d, e	An intermodulation attenuation below an acceptable level may cause unnecessary interference in the radio spectrum.	7.1.8.2.1	8.8 and 8.8.1
6.5.1.2	Blocking characteristics.	e	Insufficient blocking characteristics of the receiver may lead to an unnecessarily high number of radio transmission attempts	7.2.5.2 and F.5 table F.2	9.5 and 9.5.1
6.5.2.2	Spurious response rejection.	d, e	Insufficient spurious response rejection may lead to an unnecessarily high number of radio transmission attempts.	7.2.6.2 and F.5 table F.2	9.6
6.5.3.2	Intermodulation response rejection.	d, e	Insufficient intermodulation response rejection may lead to an unnecessarily high number of radio transmission attempts	7.2.7.2 and F.5 table F.2	9.7 and 9.7.1
6.5.4.2	Unwanted conducted emission in reception.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.8.2	9.8
6.5.5	Unwanted radiated emission.	d, e	Unwanted emissions above an acceptable level may cause unnecessary interference in the radio spectrum.	7.2.9.2	9.9

Requirement reference (note 1)	Description	Cat.	Justification	Test case limit value reference (note 2)	Test method reference (note 3)
6.6.1.2	Modulation accuracy.	e, f	Insufficient modulation accuracy may lead to the transmission of incorrect data.	7.3.1.2	10.1, 10.1.1 and 10.1.3
6.6.2.1	Nominal error rate.	e, f	An unacceptable nominal error rate may lead to the reception of incorrect data.	7.2.2.2 and F.5 table F.2	9.2 and 9.2.1
6.6.2.2	Dynamic reference sensitivity performance.	e, f	An unacceptable dynamic reference sensitivity performance may lead to the reception of incorrect data.	7.2.3.2 and F.5 table F.2	9.3, 9.3.1 and 9.3.3
6.6.2.3	Reference interference performance.	e, f	An unacceptable reference interference performance may lead to the reception of incorrect data.	7.2.4.2 and F.5 table F.2	9.4 and 9.4.1
6.6.2.4	Static reference sensitivity performance.	e, f	An unacceptable static reference sensitivity performance may lead to the reception of incorrect data.	Implicit by 7.2.5.2, 7.2.6.2, 7.2.7.2 and F.5 table F.2	Implicit by 9.5.1, 9.6 and 9.7.1.
6.6.2.5	MS receiver performance for synchronization burst acquisition.	d, e	An insufficient synchronization burst acquisition may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
7.2	DM-MS synchronization requirement.	d, e	An insufficient synchronization may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing
7.3.2	Relationship between counters	d, e	An incorrect relation between the counters may cause unnecessary interference in the radio spectrum.	-	Implicit by MAC layer testing.
7.4	RF frequency accuracy	d, e	An insufficient RF frequency accuracy may cause unnecessary interference in the radio spectrum.	F.6.3.1	F.6.3.2
7.5	Requirement for synchronization of a slave DM mobile	d, e	An insufficient synchronization may cause unnecessary interference in the radio spectrum.	F.6.4.2	F.6.4.3
9.4.5	Mapping of logical channels	d, e	Incorrect mapping of logical channels into physical channels may cause interference with other users.	-	Implicit by MAC layer testing.
ETS 300 394-1 [7], subclause 6.2.2	Extreme ambient temperatures.	d, e, f	Equipment, which is not supposed to operate in a controlled environment, may cause unnecessary interference in the radio spectrum, if the requirements to output power, adjacent channel power and reference sensitivity are not fulfilled at extreme temperatures.	-	Implicit by test of output power, adjacent channel power and reference sensitivity.
NOTE 1: The requirements are specified in ETS 300 396-2 [15] under the given subclause, except when otherwise stated. NOTE 2: The test case limit values are specified in ETS 300 394-1 [7], under the given subclause. NOTE 3: The test methods are specified in ETS 300 394-1 [7], under the given subclause.					

In addition to the requirements specified in table 9, the following applies for the TETRA DMO emergency access for the frequency bands and channel arrangements defined in subclause 6.2 of ETS 300 396-2 [15]:

- the RF carrier frequencies shall be within the bands 380 MHz to 385 MHz and 390 MHz to 395 MHz.

The requirements for frequency bands are tested implicitly.

4.3.1.2 Layer 2 requirements

This subclause contains the layer 2 requirements at the Ud air interface for MS-MS operation.

Table 10: Lower MAC layer requirements at the Ud air interface for MS-MS operation

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference	Test case reference (note 2)
8.3.1.1	Error control scheme for Synchronization Signalling CHannel (SCH/S).	d, e	Incorrect coding/decoding of SCH/S may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
8.3.1.2	Error control scheme for Half-slot Signalling CHannel (SCH/H) and Stealing CHannel (STCH).	d, e	Incorrect coding/decoding of SCH/H and STCH may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
8.3.1.3	Error control scheme for Full-slot Signalling Channel (SCH/F).	d, e	Incorrect coding/decoding of SCH/F may cause unnecessary transmissions.	-	Implicit by Upper MAC layer testing.
NOTE 1: The requirements are specified in ETS 300 396-2 [15] under the given subclause. NOTE 2: The test cases, as referenced, are specified in ETS 300 394-4-2 [23], annex A.2.					

Table 11: Upper MAC layer requirements at the Ud air interface for MS-MS operation

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
8.4.5.1.7	Transmitting DM-OCCUPIED	e	Incorrectly implemented procedures for signalling of channel occupation may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_MAC_BV_CU_02	DMO_MSMS_MAC_BV_CU_02
8.4.6.1	Transmitting DM-RESERVED	e	Incorrectly implemented procedures for signalling of channel reservation may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_MAC_BV_CU_04	DMO_MSMS_MAC_BV_CU_04
8.5.6.1	Transmission of messages	e, f	Incorrectly implemented transmission of messages may cause unnecessary and disallowed transmission attempts.	DMO_MSMS_MAC_BV_CU_06	DMO_MSMS_MAC_BV_CU_06
8.5.7.2.1	Indicating frames available for requests	e	Incorrectly implemented procedures for indicating frames available for requests may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_MAC_BV_SM_09, DMO_MSMS_MAC_BV_SM_10	DMO_MSMS_MAC_BV_SM_09, DMO_MSMS_MAC_BV_SM_10

NOTE 1: The requirements are specified in ETS 300 396-3 [16], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-4-1 [22], clause 6.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-4-2 [23], annex A.

4.3.1.3 Layer 3 requirements

This subclause contains the layer 3 requirements at the Ud air interface for MS-MS operation.

Table 12: Circuit mode requirements at the Ud air interface for MS-MS operation

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
6.2.1.1	Outgoing call set-up on available channel without presence check	e, f	Incorrectly implemented outgoing call set-up may cause unnecessary and disallowed transmission attempts.	DMO_MSMS_DMCC_CM_CA_01, DMO_MSMS_DMCC_CM_CA_03	DMO_MSMS_DMCC_CM_CA_01, DMO_MSMS_DMCC_CM_CA_03
6.2.2.1	Outgoing call set-up on available channel with presence check	e, f	Incorrectly implemented outgoing call set-up may cause unnecessary and disallowed transmission attempts.	DMO_MSMS_DMCC_CM_CA_02, DMO_MSMS_DMCC_CM_BV_ID_04, DMO_MSMS_DMCC_CM_TI_01	DMO_MSMS_DMCC_CM_CA_02, DMO_MSMS_DMCC_CM_BV_ID_04, DMO_MSMS_DMCC_CM_TI_01
6.2.4.1	Receipt by master MS of request for pre-emption during occupation	e	Incorrectly implemented pre-emption procedures may prevent a higher priority user from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_BV_TXO_03, DMO_MSMS_DMCC_CM_BV_TXO_04	DMO_MSMS_DMCC_CM_BV_TXO_03, DMO_MSMS_DMCC_CM_BV_TXO_04
6.2.4.1	Release of radio resource at the end of transmission	e	Incorrect release of the radio resource at the end of transmission may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_TXO_02	DMO_MSMS_DMCC_CM_TI_02
6.2.4.1	Master release of resource by user application	e	Incorrect release of the radio resource by user application may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_BV_TXO_01	DMO_MSMS_DMCC_CM_BV_TXO_01
6.2.4.1	Release of radio resource at DT311 timeout	e	Incorrect release of the radio resource at the end of transmission may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_TI_02	DMO_MSMS_DMCC_CM_TI_02
6.2.4.2	Request for pre-emption during occupation	e	Incorrectly implemented procedure for request for pre-emption during occupation may lead to unallowed transmission attempts causing interference to other users.	DMO_MSMS_DMCC_CM_BV_RO_02, DMO_MSMS_DMCC_CM_BV_RO_03	DMO_MSMS_DMCC_CM_BV_RO_02, DMO_MSMS_DMCC_CM_BV_RO_03
6.2.5.1	Receipt by master MS of request for pre-emption during reservation	e	Incorrectly implemented pre-emption procedures may prevent a higher priority user from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_BV_TR_02, DMO_MSMS_DMCC_CM_BV_TR_03, DMO_MSMS_DMCC_CM_BV_TR_07	DMO_MSMS_DMCC_CM_BV_TR_02, DMO_MSMS_DMCC_CM_BV_TR_03, DMO_MSMS_DMCC_CM_BV_TR_07

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
6.2.5.1	Receipt by master MS of request for changeover during reservation	e	Incorrectly implemented changeover procedures may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_BV_TR_04, DMO_MSMS_DMCC_CM_BV_TR_08	DMO_MSMS_DMCC_CM_BV_TR_04, DMO_MSMS_DMCC_CM_BV_TR_08
6.2.5.1	Release of radio resource during reservation	e	Incorrect release of the radio resource may prevent other users from gaining access to the radio frequency spectrum.	DMO_MSMS_DMCC_CM_BV_TR_01	DMO_MSMS_DMCC_CM_BV_TR_01
6.2.5.2	Request for changeover during reservation	e	Incorrect procedure for request for changeover during reservation may lead to unallowed transmission attempts causing interference to other users.	DMO_MSMS_DMCC_CM_BV_RR_03, DMO_MSMS_DMCC_CM_BV_RR_04	DMO_MSMS_DMCC_CM_BV_RR_03, DMO_MSMS_DMCC_CM_BV_RR_04

NOTE 1: The requirements are specified in ETS 300 396-3 [16], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-4-1 [22], clause 6.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-4-2 [23], annex A.

Table 13: SDS requirements at the Ud air interface for MS-MS operation

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
6.3.1.1.1	Sending unacknowledged short data on an available channel	e, f	Incorrectly implemented procedure for sending unacknowledged short data may cause unnecessary and disallowed transmission attempts.	DMO_MSMS_DMCC_SDS_CA_01	DMO_MSMS_DMCC_SDS_CA_01
6.3.1.1.2	Sending acknowledged short data on an available channel	e, f	Incorrectly implemented procedure for sending acknowledged short data may cause unnecessary and disallowed transmission attempts.	DMO_MSMS_DMCC_SDS_BV_ID_01, DMO_MSMS_DMCC_SDS_BV_ID_02, DMO_MSMS_DMCC_SDS_TI_01	DMO_MSMS_DMCC_SDS_BV_ID_01, DMO_MSMS_DMCC_SDS_BV_ID_02, DMO_MSMS_DMCC_SDS_TI_01
6.3.2.2	Receiving acknowledged short data	e	Incorrectly implemented procedure for receiving acknowledged short data may cause unnecessary transmission attempts by transmitting MS.	DMO_MSMS_DMCC_SDS_BV_ID_03, DMO_MSMS_DMCC_SDS_BV_ID_04, -	DMO_MSMS_DMCC_SDS_BV_ID_03, DMO_MSMS_DMCC_SDS_BV_ID_04, Implicit by testing of Security functions
6.3.4	FCS checking in reception	e, f	Incorrect FCS checking in reception will cause unnecessary transmission attempts.	DMO_MSMS_DMCC_SDS_BV_ID_04	DMO_MSMS_DMCC_SDS_BV_ID_04
6.3.4	FCS calculation in transmission	e, f	Incorrect FCS calculation in transmission will cause unnecessary transmission attempts.	DMO_MSMS_DMCC_SDS_BV_ID_05	DMO_MSMS_DMCC_SDS_BV_ID_05

NOTE 1: The requirements are specified in ETS 300 396-3 [16], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-4-1 [22], clause 6.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-4-2 [23], annex A.

4.3.1.4 Security requirements

This subclause contains the security requirements at the Ud air interface.

Table 14: Security requirements at the Ud air interface

Requirement reference (note 1)	Description	Cat.	Justification	Test purpose reference (note 2)	Test case reference (note 3)
6.3	Air interface encryption mechanism.	e	Incorrectly implemented air interface encryption may cause misuse of traffic channels.	-	Implicit by DMCC testing (note 4).
7.5.1	Key transfer mechanism for transferring the key from key holder to key user.	e	Incorrect ciphering key transfer may cause misuse of traffic channels preventing effective use of radio frequency spectrum.	TP/Sec_DM/L3/OTAR/BV/01, TP/Sec_DM/L3/OTAR/BV/02	Sec_DM_L3_OTAR_BV_01, Sec_DM_L3_OTAR_BV_02
7.5.2	Key transfer mechanism for transferring the key from key holder acting as a relay for key sealer to key user.	e	Incorrect ciphering key transfer may cause misuse of traffic channels preventing effective use of radio frequency spectrum.	TP/Sec_DM/L3/OTAR/BV/01, TP/Sec_DM/L3/OTAR/BV/02, TP/Sec_DM/L3/OTAR/BV/03	Sec_DM_L3_OTAR_BV_01, Sec_DM_L3_OTAR_BV_02, Sec_DM_L3_OTAR_BV_03
7.5.3	Key transfer mechanism for distributing the SCK unsolicited.	e	Incorrect ciphering key transfer may cause misuse of traffic channels preventing effective use of radio frequency spectrum.	TP/Sec_DM/L3/OTAR/BV/04	Sec_DM_L3_OTAR_BV_04
8.7.3.1	Disabling of target.	e	Incorrect MS operation when temporarily or permanently disabled may cause disallowed use of radio frequency spectrum. Disabling of equipment provides mechanism to prevent defective MS loading the air interface whilst disabling the user prevents unauthorized use of the air interface.	TP/Sec_DM/L3/SED/BV/PD/TAR/02	Sec_DM_L3_SED_BV_PD_TAR_02
8.7.3.2	Enabling of target.	e	Incorrectly implemented enabling procedure may result in disallowed transmission attempts and unnecessary occupation of a radio channel.	TP/Sec_DM/L3/SED/BV/EN/TAR/01, TP/Sec_DM/L3/SED/BV/EN/TAR/02	Sec_DM_L3_SED_BV_EN_TAR_01, Sec_DM_L3_SED_BV_EN_TAR_02
8.7.3.3	TEI delivery.	e	TEI delivery is required to perform disabling of equipment, which provides a mechanism to prevent defective MS loading the air interface.	TP/Sec_DM/L3/SED/BV/TEI/01	Sec_DM_L3_SED_BV_TEI_01

NOTE 1: The requirements are specified in ETS 300 396-6 [19], under the given subclause.
NOTE 2: The test purposes, as referenced, are specified in ETS 300 394-5-2 [13], clause 7.
NOTE 3: The test cases, as referenced, are specified in ETS 300 394-5-3 [14], annex B.
NOTE 4: For the DMCC testing of the terminals supporting security, the security features shall be enabled.

4.3.2 Other entities at the Ud air interface

Essential requirements for other interfaces at the Ud air interface will be included in a future edition of the present document.

4.4 Other interfaces

There are no TETRA specific attachment requirements for:

- interface between TETRA network and the public network;
- interface between TETRA network and the Line Station (LS);
- interface between TETRA network and another TETRA network;
- Peripheral Equipment Interface (PEI);
- Subscriber Identity Module (SIM) card interface.

5 Test specification

5.1 Introduction

This clause provides the test references for the requirements of the present document used to determine the compliance of an IUT to the present document.

The tests referenced in this clause are defined in corresponding TETRA conformance testing specifications:

a) radio conformance testing specification, ETS 300 394-1 [7];

b) protocol conformance testing specifications:

- Test Suite Structure (TSS) and Test Purposes (TPs) for V+D, ETS 300 394-2-1 [8];
- Test Suite Structure (TSS) and Test Purposes (TPs) for DMO MS to MS, ETS 300 394-4-1 [22];
- Test Suite Structure (TSS) and Test Purposes (TPs) for Security, ETS 300 394-5-2 [13];
- ATS for NWK layer, ETS 300 394-2-2 [9];
- ATS for LLC layer, ETS 300 394-2-3 [10];
- ATS for MAC layer, ETS 300 394-2-4 [11];
- ATS for DMO MS to MS, ETS 300 394-4-2 [23];
- ATS for Security, ETS 300 394-5-3 [14].

NOTE: The ATSs for protocol testing are written in TTCN according to ISO/IEC 9646-3 [25]. For detailed information on conventions used for TPs refer to ETS 300 394-2-1 [8] , clause 5. For detailed information on ATS conventions refer to ETS 300 394-2-2 [9], clause 5 for NWK layer; ETS 300 394-2-3 [10], clause 5 for LLC layer; and ETS 300 394-2-4 [11], clause 5 for upper MAC layer.

Not all the tests defined for the conformance testing are relevant for type approval testing and the tests referenced in this clause are the ones corresponding to the justified requirements in clause 4 in the present document.

To allow test case selection for the purposes of the present document, the test case index and test case selection expression definitions are specified for the physical layer.

For protocol layers the TSS, test case index, test case selection expression definitions, and test suite parameter definitions are redefined and those tables are included for each ATS in this clause. The ATS conventions for the protocol conformance testing have been followed in the present document to allow one to one mapping with the test cases in the conformance test suites and the redefined structural parts in the present document.

All the tables for testing in this clause follow the TTCN format in ISO/IEC 9646-3 [25].

5.2 Environmental conditions

Radio type approval testing shall be performed at normal and (where required) extreme test conditions as specified in ETS 300 394-1 [7].

Protocol type approval testing shall be performed within the intended environmental conditions of the IUT.

5.3 Test configuration

The test configurations given or referenced in the present document do not imply a specific realization of test equipment or arrangement or use of specific test devices for type approval testing. However, any test configuration and equipment used shall provide the test conditions specified in the tests to enable testing according to the present document.

Detailed test equipment accuracy, specification tolerance of the test devices, or test equipment conformity with the requirements set by the type approval tests are not subjects of the present document. Where such details are provided, they are considered as being an informative addition to the test specifications.

In the case of a protocol test resulting in a fail verdict, the corresponding test case execution will be repeated at least once to ensure the result being caused by the requirements in the test case.

The manufacturer of the IUT shall provide an interface for connecting the IUT to the test system for type approval testing according to the present document. This interface may be located in the IUT or it may exist in an additional device dedicated for testing purposes. The interface may be based on a specific test connector protocol or it may use radio interface. Specification for the actual interface being used is outside the scope of the present document.

The IUT may need parameterization or special initialization for testing. Those actions shall be performed according to any specific instructions provided by the manufacturer and are outside the scope of the present document.

5.4 Um air interface test specification

5.4.1 Physical layer test specification

5.4.1.1 Test case index for physical layer

Table 15: Test case index for physical layer

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.1.1.2 a)	8.1 and 8.1.1 a), b2) and d)	Mobile_Station	To test that the output power for the MS corresponds to the declared power class.
7.1.1.2 b)	8.1 and 8.1.1 a), b), c) and d)	Mobile_Station	To test the MS transmitter output power versus time.
7.1.1.2 a)	8.1 and 8.1.1 c)	Mobile_Station	To test the nominal MS power control levels.
7.1.1.2 a)	8.1 and 8.1.2 a), b2) and d)	Base_Station	To test that the output power for the BS corresponds to the declared power class.
7.1.1.2 b)	8.1 and 8.1.2 a), b) and d)	Base_Station_ Discontinous_Transmission	To test the BS transmitter output power versus time .
7.1.1.2 a) and b)	8.1 and 8.1.2 c) and d)	Base_Station_Several_Power_Classes	To test that the output power for the BS corresponds to the declared power class and transmitter output power versus time.
7.1.2.2	8.2	Discontinous_Transmission	To test the output power in the non-active transmit state.
7.1.3.2	8.3	Applicable_to_all_Um_IUTs	To test the unwanted conducted emission over the useful part of the burst.
7.1.4.2	8.4	Discontinous_Transmission	To test the unwanted conducted emission during switching transients.
7.1.5.2	8.5	Applicable_to_all_Um_IUTs	To test the unwanted conducted emission far from the carrier.
7.1.6.2	8.6	Applicable_to_all_Um_IUTs	To test the unwanted radiated emission in the active transmit state.
7.1.7.2	8.7 and 8.7.1	Mobile_Station	To test the MS unwanted conducted emission during CLCH .
7.1.7.2	8.7 and 8.7.2	Base_Station	To test the BS unwanted conducted emission during BLCH.
7.1.8.2.1	8.8 and 8.8.1	Mobile_Station	To test the MS transmitter intermodulation attenuation.
7.1.8.2.2	8.8 and 8.8.2	Base_Station_Several_Transmitters_Or_Collocated_With_Other_Radio_Equipment	To test the BS transmitter intermodulation: - Minimum 70 dB attenuation.
7.1.8.2.2	8.8 and 8.8.2	Base_Station_Single_Transmitter_And_Not_Collocated_With_Other_Radio_Equipment	To test the BS transmitter intermodulation: - Minimum 40 dB attenuation.
7.1.8.2.3	8.8 and 8.8.3	Base_Station_Several_Transmitters	To test the intra-BS transmitter intermodulation attenuation.
7.2.2.2	9.2 and 9.2.1	Mobile_Station_Class_A	To test the nominal error rate of a class A MS. ETS 300 394-1 [7], table A.1; nominal error: - TCH/7,2, TU50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.
7.2.2.2	9.2 and 9.2.1	Mobile_Station_Class_B	To test the nominal error rate of a class B MS. ETS 300 394-1 [7], table A.2; nominal error: - TCH/7,2, TU50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.
7.2.2.2	9.2 and 9.2.1	Mobile_Station_Class_E	To test the nominal error rate of a class E MS. ETS 300 394-1 [7], table A.3; nominal error: - TCH/7,2, TU50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.2.2.2	9.2 and 9.2.2	Base_Station_Class_A	To test the nominal error rate of a class A BS. ETS 300 394-1 [7], table A.7; nominal error: - TCH/7,2, TU50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.
7.2.2.2	9.2 and 9.2.2	Base_Station_Class_B	To test the nominal error rate of a class B BS. ETS 300 394-1 [7], table A.8; nominal error: - TCH/7,2, TU50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_A	To test the dynamic reference sensitivity performance of a class A MS. ETS 300 394-1 [7], table A.1; sensitivity: - SCH/F, TU50, - 103 (- 97) dBm, - BSCH, HT200, - 103 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_A_Protected_Data	To test the dynamic reference sensitivity performance of a class A MS supporting protected circuit mode data. ETS 300 394-1 [7], table A.1; sensitivity: - TCH/2,4, N=1, HT200, - 103 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_B	To test the dynamic reference sensitivity performance of a class B MS. ETS 300 394-1 [7], table A.2; sensitivity: - SCH/F, TU50, - 103 (- 97) dBm, - BSCH, TU50, - 103 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_B_Protected_Data	To test the dynamic reference sensitivity performance of a class B MS supporting protected circuit mode data. ETS 300 394-1 [7], table A.2; sensitivity: - TCH/2,4, N=1, TU50, - 103 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_E	To test the dynamic reference sensitivity performance of a class E MS. ETS 300 394-1 [7], table A.3; sensitivity: - SCH/F, TU50, - 103 (- 97) dBm, - BSCH, EQ200, - 103 dBm.
7.2.3.2	9.3 and 9.3.1	Mobile_Station_Class_E_Protected_Data	To test the dynamic reference sensitivity performance of a class E MS supporting protected circuit mode data. ETS 300 394-1 [7], table A.3; sensitivity: - TCH/2,4, N=1, EQ200, - 103 dBm.
7.2.3.2	9.3 and 9.3.2	Base_Station_Class_A	To test the dynamic reference sensitivity performance of a class A BS. ETS 300 394-1 [7], table A.7; sensitivity: - SCH/F, TU50, - 106 (- 100) dBm.
7.2.3.2	9.3 and 9.3.2	Base_Station_Class_A_Protected_Data	To test the dynamic reference sensitivity performance of a class A BS supporting protected circuit mode data. ETS 300 394-1 [7], table A.7; sensitivity: - TCH/2,4, N=1, HT200, - 106 dBm.
7.2.3.2	9.3 and 9.3.2	Base_Station_Class_B	To test the dynamic reference sensitivity performance of a class B BS. ETS 300 394-1 [7], table A.8; sensitivity: - SCH/F, TU50, - 106 (- 100) dBm.
7.2.3.2	9.3 and 9.3.2	Base_Station_Class_B_Protected_Data	To test the dynamic reference sensitivity performance of a class B BS supporting protected circuit mode data. ETS 300 394-1 [7], table A.8; sensitivity: - TCH/2,4, N=1, TU50, - 106 dBm.
7.2.3.2	9.3 and 9.3.3	Mobile_Station	To test the dynamic reference sensitivity performance of an MS. ETS 300 394-1 [7], table A.11: - SCH/F, TU50, - 103 dBm, - AACH, TU50, - 103 dBm.
7.2.3.2	9.3 and 9.3.3	Base_Station	To test the dynamic reference sensitivity performance of a BS. ETS 300 394-1 [7], table A.11: - SCH/F, TU50, - 106 dBm.

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.2.4.2	9.4 and 9.4.1	Mobile_Station_Class_A	To test the reference interference performance of a class A MS. ETS 300 394-1 [7], table A.1: - co-channel interference, - adjacent channel interference.
7.2.4.2	9.4 and 9.4.1	Mobile_Station_Class_B	To test the reference interference performance of a class B MS. ETS 300 394-1 [7], table A.2: - co-channel interference, - adjacent channel interference.
7.2.4.2	9.4 and 9.4.1	Mobile_Station_Class_E	To test the reference interference performance of a class E MS. ETS 300 394-1 [7], table A.3: - co-channel interference, - adjacent channel interference.
7.2.4.2	9.4 and 9.4.2	Base_Station_Class_A	To test the reference interference performance of a class A BS. ETS 300 394-1 [7], table A.7: - co-channel interference, - adjacent channel interference.
7.2.4.2	9.4 and 9.4.2	Base_Station_Class_B	To test the reference interference performance of a class B BS. ETS 300 394-1 [7], table A.8: - co-channel interference, - adjacent channel interference.
7.2.5.2	9.5 and 9.5.1	Mobile_Station_Class_A	To test the blocking characteristics of a class A MS. ETS 300 394-1 [7], table A.1; blocking.
7.2.5.2	9.5 and 9.5.1	Mobile_Station_Class_B	To test the blocking characteristics of a class B MS. ETS 300 394-1 [7], table A.2; blocking.
7.2.5.2	9.5 and 9.5.1	Mobile_Station_Class_E	To test the blocking characteristics of a class E MS. ETS 300 394-1 [7], table A.3; blocking.
7.2.5.2	9.5 and 9.5.2	Base_Station_Class_A	To test the blocking characteristics of a class A BS. ETS 300 394-1 [7], table A.7; blocking.
7.2.5.2	9.5 and 9.5.2	Base_Station_Class_B	To test the blocking characteristics of a class B BS. ETS 300 394-1 [7], table A.8; blocking.
7.2.6.2	9.6	Mobile_Station_Class_A	To test the spurious response rejection of a class A MS. ETS 300 394-1 [7], table A.1; spurious response.
7.2.6.2	9.6	Mobile_Station_Class_B	To test the spurious response rejection of a class B MS. ETS 300 394-1 [7], table A.2; spurious response.
7.2.6.2	9.6	Mobile_Station_Class_E	To test the spurious response rejection of a class E MS. ETS 300 394-1 [7], table A.3; spurious response.
7.2.6.2	9.6	Base_Station_Class_A	To test the spurious response rejection of a class A BS. ETS 300 394-1 [7], table A.7; spurious response.
7.2.6.2	9.6	Base_Station_Class_B	To test the spurious response rejection of a class B BS. ETS 300 394-1 [7], table A.8; spurious response.
7.2.7.2	9.7 and 9.7.1	Mobile_Station_Class_A	To test the intermodulation response rejection of a class A MS. ETS 300 394-1 [7], table A.1; intermodulation.
7.2.7.2	9.7 and 9.7.1	Mobile_Station_Class_B	To test the intermodulation response rejection of a class B MS. ETS 300 394-1 [7], table A.2; intermodulation.
7.2.7.2	9.7 and 9.7.1	Mobile_Station_Class_E	To test the intermodulation response rejection of a class E MS. ETS 300 394-1 [7], table A.3; intermodulation.
7.2.7.2	9.7 and 9.7.2	Base_Station_Class_A	To test the intermodulation response rejection of a class A BS. ETS 300 394-1 [7], table A.7; intermodulation.
7.2.7.2	9.7 and 9.7.2	Base_Station_Class_B	To test the intermodulation response rejection of a class B BS. ETS 300 394-1 [7], table A.8; intermodulation.
7.2.8.2	9.8	Applicable_to_all_Um_IUTs	To test the unwanted conducted emission.
7.2.9.2	9.9	Applicable_to_all_Um_IUTs	To test the unwanted radiated emission.

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.3.1.2	10.1, 10.1.1 and 10.1.3	Mobile_Station	To test the modulation accuracy of an MS.
7.3.1.2	10.1, 10.1.2 and 10.1.3	Base_Station	To test the modulation accuracy of a BS.
7.3.2.2	10.2, 10.2.1	Mobile_Station	To test the carrier frequency error of an MS.
7.3.2.2	10.2, 10.2.2	Base_Station	To test the carrier frequency error of a BS.
7.3.4.2	10.4	Mobile_Station	To test the frame alignment performance of an MS.
7.3.5.2	10.5	Mobile_Station	To test the MS adaptive power control.
NOTE 1: The test case limit values, as referenced, are specified in ETS 300 394-1 [7], clause 7. NOTE 2: The test methods, as referenced, are specified in ETS 300 394-1 [7], clauses 8 to 10.			

5.4.1.2 Test case selection expression definitions for physical layer

Table 16: Test case selection expression definitions for physical layer

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
Applicable_to_all_Um_IUTs	A.1/1	TETRA V+D equipment.
Mobile_Station	A.2/2	MS equipment.
Base_Station	A.2/1	BS equipment.
Base_Station_Several_Power_Classes	A.2/1 AND A.5/1	BS equipment implementing more than one power class.
Base_Station_Several_Transmitters	A.2/1 AND NOT A.5/2	BS equipment with more than one transmitter.
Base_Station_Several_Transmitters_Or_Collocated_With_Other_Radio_Equipment	A.2/1 AND NOT (A.5/2 AND A.5/3)	BS equipment with more than one transmitter or to be collocated with other radio equipment operating in the same frequency band.
Base_Station_Single_Transmitter_And_Not_Collocated_With_Other_Radio_Equipment	A.2/1 AND A.5/2 AND A.5/3	BS equipment with single transmitter and not to be collocated with other radio equipment operating in the same frequency band.
Base_Station_Discontinous_Transmission	(A.2/1 AND (A.3/2 OR A.3/3))	BS equipment operating in discontinuous mode.
Discontinous_Transmission	(A.2/1 AND (A.3/2 OR A.3/3)) OR A.2/2	BS equipment operating in discontinuous mode or MS equipment.
Mobile_Station_Class_A	A.2/2 AND A.5/4	MS equipment intended for class A environment.
Mobile_Station_Class_B	A.2/2 AND A.5/5	MS equipment intended for class B environment.
Mobile_Station_Class_E	A.2/2 AND A.5/6	MS equipment intended for class E environment.
Base_Station_Class_A	A.2/1 AND A.5/4	BS equipment intended for class A environment.
Base_Station_Class_B	A.2/1 AND A.5/5	BS equipment intended for class B environment.
Mobile_Station_Class_A_Protected_Data	A.2/2 AND A.2/3 AND A.5/4	MS equipment intended for class A environment supporting protected circuit mode data.
Mobile_Station_Class_B_Protected_Data	A.2/2 AND A.2/3 AND A.5/5	MS equipment intended for class B environment supporting protected circuit mode data.
Mobile_Station_Class_E_Protected_Data	A.2/2 AND A.2/3 AND A.5/6	MS equipment intended for class E environment supporting protected circuit mode data.
Base_Station_Class_A_Protected_Data	A.2/1 AND A.2/3 AND A.5/4	BS equipment intended for class A environment supporting protected circuit mode data.
Base_Station_Class_B_Protected_Data	A.2/1 AND A.2/3 AND A.5/5	BS equipment intended for class B environment supporting protected circuit mode data.
Detailed Comments The selection expressions given in the Selection Expression-column are Boolean expressions, referring to the declarations made in requirement tables in annex A in the present document.		

5.4.2 Layer 2 test specification

5.4.2.1 Test suite structure for MAC layer

Table 17: Test suite structure for MAC layer

Test Suite Structure		
Suite Name: MAC Standards Ref.: ETS 300 392-2 [1] PICS Ref.: ETS 300 392-14 [6] PIXIT Ref.: ETS 300 394-2-4 [11] , annex B Test Method(s): Embedded single party remote test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
MAC/	Applicable_to_all_IUTs	Check the dynamic requirements of the MAC layer.
MAC/CA/	Applicable_to_all_IUTs	Check the basic capabilities of the MAC layer.
MAC/BV/	Applicable_to_all_IUTs	Check the valid behaviour requirements of the MAC layer.
MAC/BV/MI/	Minimum_mode_supported	Check the minimum mode functionality.
MAC/BV/RA/	Applicable_to_all_IUTs	Check random access.
MAC/BV/RE/	Applicable_to_all_IUTs	Check reserved access.
MAC/BI/	Applicable_to_all_IUTs	Check invalid behaviour of the MAC layer.
MAC/BI/MI/	Minimum_mode_not_supported_and_CC_supported	Check invalid behaviour of MS not supporting minimum mode operations.
MAC/BI/RA/	Applicable_to_all_IUTs	Check invalid behaviour of random access.
MAC/TI/	Applicable_to_all_IUTs	Check the timers of the MAC layer.

5.4.2.2 Test case index for MAC layer

Table 18: Test case index for MAC layer

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
MAC/CA/	MAC_CA_01	Applicable_to_all_IUTs	Check the random access using an LLC acknowledgement.
MAC/BV/MI/	MAC_BV_MI_01	Minimum_mode_supported	Check the uplink transmission in minimum mode.
MAC/BV/MI/	MAC_BV_MI_02	Minimum_mode_supported	Check uplink transmission after end of minimum mode.
MAC/BV/RA/	MAC_BV_RA_01	Applicable_to_all_IUTs	Check the downlink transmission of a fragmented message.
MAC/BV/RE/	MAC_BV_RE_01	Applicable_to_all_IUTs	Check uplink transmission of a fragmented message when capacity has been granted.
MAC/BV/RE/	MAC_BV_RE_02	Applicable_to_all_IUTs	Check the delay mechanism of allocated uplink signalling capacity.
MAC/BV/RE/	MAC_BV_RE_03	Applicable_to_all_IUTs	Check uplink transmission of a fragmented message when capacity is requested when starting the transmission.
MAC/BI/MI/	MAC_BI_MI_01	Minimum_mode_not_supported_and_CC_supported	Check that an IUT not supporting minimum mode does not initiate random access during minimum mode.
MAC/BI/RA/	MAC_BI_RA_01	Applicable_to_all_IUTs	Check that the IUT does not transmit when no random access transmission is allowed for the IUT.
MAC/BI/RA/	MAC_BI_RA_02	Applicable_to_all_IUTs	Check that the IUT retries random access according to the ALOHA parameter Nu.
MAC/TI/	MAC_TI_02	Applicable_to_all_IUTs	Check that the random access attempt is repeated within WT downlink signalling opportunities.

5.4.2.3 Test case selection expression definitions for MAC layer

Table 19: Test case selection expression definitions for MAC layer

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
Applicable_to_all_IUTs	TBR_RT_UM_MS	IUT is TETRA V+D MS.
Minimum_mode_supported	PIC_MINIMUM_MODE	IUT is TETRA V+D MS supporting minimum mode.
Minimum_mode_not_supported_and_CC_supported	NOT (PIC_MINIMUM_MODE) AND (PIC_CALL_CONTROL)	IUT is TETRA V+D MS not supporting minimum mode, but supporting CC.

5.4.2.4 Test suite parameter definitions for MAC layer

Table 20: Test suite parameter definitions for MAC layer

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
TBR_RT_UM_MS	BOOLEAN	A.3.1, table A.2/2	TETRA V+D MS.
PIC_MINIMUM_MODE	BOOLEAN	A.3.3.2, table A.11/2	Indicate whether minimum mode procedures are supported.
PIC_CALL_CONTROL	BOOLEAN	A.3.4.1, table A.28/1	Indicate whether CMCE call control service is supported.
PIX_GSSI_1	GSSI_Type	B.2.2.1, table B.2/1	A group identifier.
PIX_GSSI_2	GSSI_Type	B.2.2.1, table B.2/2	A group identifier.
PIX_GSSI_3	GSSI_Type	B.2.2.1, table B.2/3	A group identifier.
PIX_SSI	SSI_Type	B.2.2.1, table B.2/4	The ITSI value of the MS.
PIX_HOME_LA	MM_LocationAreaType	B.2.2.1, table B.2/5	Home location area of the MS.
PIX_HOME_MCC	MM_MCC_Type	B.2.2.1, table B.2/6	Home mobile country code of the MS.
PIX_HOME_MNC	MM_MNC_Type	B.2.2.1, table B.2/7	Home mobile network code of the MS.
PIX_NEW_LOCATION_AREA_1	MM_LocationAreaType	B.2.2.1, table B.2/8	Unique registration area in the home MCC and MNC.
PIX_NEW_LOCATION_AREA_2	MM_LocationAreaType	B.2.2.1, table B.2/9	Unique registration area in the home MCC and MNC.
PIX_NEW_LOCATION_AREA_3	MM_LocationAreaType	B.2.2.1, table B.2/10	Unique registration area in the home MCC and MNC.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.4.2.5 Test suite structure for LLC layer

Table 21: Test suite structure for LLC layer

Test Suite Structure		
Suite Name: LLC Standards Ref.: ETS 300 392-2 [1] PICS Ref.: ETS 300 392-14 [6] PIXIT Ref.: ETS 300 394-2-3 [10] , annex B Test Method(s): The embedded version of the remote single party testing method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
LLC/CA/	Applicable_to_all_IUTs	To test the basic capabilities of the LLC entity of the IUT.
LLC/CA/BA/	Applicable_to_all_IUTs	To test the basic capabilities of the LLC entity of the IUT, when operating in basic link, acknowledged data transfer mode.
LLC/CA/BU/	Applicable_to_all_IUTs	To test the basic capabilities of the LLC entity of the IUT, when operating in basic link, unacknowledged data transfer mode.
LLC/BV/	Applicable_to_all_IUTs	To test the valid behaviour of the LLC entity of the IUT.
LLC/BV/BA/	Applicable_to_all_IUTs	To test the valid behaviour of the LLC entity of the IUT, when using the basic link, acknowledged data transfer.
LLC/BI/	Applicable_to_all_IUTs	To test the invalid behaviour of the LLC entity of the IUT.
LLC/BI/BA/	BLA_with_FCS_in_reception_supported	To test the invalid behaviour of the LLC entity of the IUT, when using the basic link, acknowledged data transfer.
LLC/BI/BU/	BLU_data_reception_with_FCS_supported	To test the invalid behaviour of the LLC entity of the IUT, when using the basic link, unacknowledged data transfer.
LLC/TI/	Applicable_to_all_IUTs	To test the protocol behaviour related to timers of the LLC entity of the IUT.
LLC/TI/BA/	Applicable_to_all_IUTs	To test the protocol behaviour related to timers of the LLC entity of the IUT when using basic link, acknowledged service.

5.4.2.6 Test case index for LLC layer

Table 22: Test case index for LLC layer

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
LLC/CA/BA/	LLC_CA_BA_01	Applicable_to_all_IUTs	IUT transmits a BL-DATA or BL-DATA PDU with SDU number 0 at the first time after power up.
LLC/CA/BA/	LLC_CA_BA_02	Applicable_to_all_IUTs	IUT transmits BL-DATA correctly when no data is to be acknowledged.
LLC/CA/BA/	LLC_CA_BA_03	Applicable_to_all_IUTs	IUT accepts a BL-ACK without data as an acknowledgement to BL-DATA.
LLC/CA/BA/	LLC_CA_BA_04	Applicable_to_all_IUTs	IUT accepts a BL-ACK with data as an acknowledgement to BL-DATA.
LLC/CA/BA/	LLC_CA_BA_05	Applicable_to_all_IUTs	IUT accepts a BL-ADATA as an acknowledgement to BL-DATA.
LLC/CA/BA/	LLC_CA_BA_06	BLA_with_FCS_in_transmission_supported	IUT calculates the FCS correctly with basic link acknowledged data transfer PDUs.
LLC/CA/BA/	LLC_CA_BA_07	Applicable_to_all_IUTs	IUT sends an acknowledgement to BL-DATA with no FCS.
LLC/CA/BA/	LLC_CA_BA_08	Applicable_to_all_IUTs	IUT sends an acknowledgement to BL-DATA with correct FCS.
LLC/CA/BA/	LLC_CA_BA_09	Applicable_to_all_IUTs	IUT sends an acknowledgement to BL-ADATA.
LLC/CA/BU/	LLC_CA_BU_03	Applicable_to_all_IUTs	IUT accepts a BL-UDATA PDU with no FCS.
LLC/CA/BU/	LLC_CA_BU_04	BLU_data_reception_with_FCS_supported	IUT accepts a BL-UDATA with a correct FCS.
LLC/BV/BA/	LLC_BV_BA_01	Applicable_to_all_IUTs	IUT increments the SDU numbers correctly in basic link acknowledged data transfer.
LLC/BV/BA/	LLC_BV_BA_02	Applicable_to_all_IUTs	IUT repeats an unacknowledged BL-DATA PDU up to the minimum value of N.252 times.
LLC/BV/BA/	LLC_BV_BA_03	Applicable_to_all_IUTs	IUT sends the acknowledgements with correct SDU numbers in acknowledged basic link.
LLC/BI/BA/	LLC_BI_BA_01	BLA_with_FCS_in_reception_supported	IUT does not accept a BL-DATA with incorrect FCS.
LLC/BI/BU/	LLC_BI_BU_01	BLU_data_reception_with_FCS_supported	IUT does not accept a BL-UDATA with incorrect FCS.
LLC/TI/BA/	LLC_TI_BA_01	Applicable_to_all_IUTs	IUT implements timer T.251 correctly.

5.4.2.7 Test case selection expression definitions for LLC layer

Table 23: Test case selection expression definitions for LLC layer

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
Applicable_to_all_IUTs	TBR_RT_UM_MS	The test case selected by this expression is applicable to all IUTs and should restrict to mandatory features to be tested.
BLA_with_FCS_in_transmission_supported	PIC_BLA_FCS_IN_TRANSMISSION	Acknowledged basic link data transmission implemented with optional FCS calculation.
BLA_with_FCS_in_reception_supported	PIC_BLA_FCS_IN_RECEPTION	Acknowledged basic link data reception implemented with optional FCS checking.
BLU_data_reception_with_FCS_supported	PIC_BLU_DATA_RECEPTION_WITH_FCS	Unacknowledged basic link data reception with FCS implemented.

5.4.2.8 Test suite parameter definitions for LLC layer

Table 24: Test suite parameter definitions for LLC layer

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
TBR_RT_UM_MS	BOOLEAN	**A.3.1**, table A.2/2	TETRA V+D MS
PIC_N_252_MIN	INTEGER	A.3.3.3, table A.26/1	The minimum value of LLC constant N.252 whether the stealing repeats are used or not.
PIC_T_251	INTEGER	A.3.3.3, table A.27/1	The value of LLC timer T.251.
PIC_BLA_FCS_IN_RECEPTION	BOOLEAN	A.3.3.3, table A.22/3	Acknowledged basic link data reception implemented with optional FCS checking.
PIC_BLA_FCS_IN_TRANSMISSION	BOOLEAN	A.3.3.3, table A.22/4	Acknowledged basic link data transmission implemented with optional FCS calculation.
PIC_BLU_DATA_RECEPTION_WITH_FCS	BOOLEAN	A.3.3.3, table A.23/3	Unacknowledged basic link data reception with FCS implemented.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.4.3 Layer 3 test specification

5.4.3.1 Test suite structure for layer 3

Table 25: Test suite structure for layer 3

Test Suite Structure		
Suite Name: NWK Standards Ref.: ETS 300 392-2 [1] PICS Ref.: ETS 300 392-14 [6] PIXIT Ref.: ETS 300 394-2-2 [9] , Annex B Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
NWK/	Applicable_to_all_IUTs	Check the dynamic behaviour requirements of the network layer protocols.
NWK/CMCE/	CMCE_supported	To test the behaviour of the CMCE module of the IUT.
NWK/CMCE/IC/	Individual_call_supported	To test the behaviour of the CMCE module of the IUT, when operating in individual call mode.
NWK/CMCE/IC/CA/	Individual_call_supported	To test the basic capabilities of the CMCE module of the IUT, when operating in individual call mode.
NWK/CMCE/IC/CA/SU/	Call_setup_supported	To test the basic capabilities of the CMCE module of the IUT during call set-up, when operating in individual call mode.
NWK/CMCE/IC/CA/CD/	Individual_call_supported	To test the basic capabilities of the CMCE module of the IUT during call disconnection, when operating in individual call mode.
NWK/CMCE/IC/BV/	Call_setup_supported	To test the valid behaviour of the CMCE module of the IUT, when operating in individual call mode.
NWK/CMCE/IC/BV/OC/	Call_setup_supported	To test the valid behaviour of the CMCE module of the IUT during outgoing call, when operating in individual call mode.
NWK/CMCE/IC/BV/CC/	Call_setup_supported	To test the valid behaviour of the CMCE module of the IUT during Colliding calls, when operating in individual call mode.
NWK/CMCE/IC/BV/MA/	Call_setup_supported	To test the valid behaviour of the CMCE module of the IUT during call maintenance, when operating in individual call mode.
NWK/CMCE/IC/BV/MA/TC/	Call_setup_supported	To test the valid behaviour of the CMCE module of the IUT during transmission control, when operating in individual call mode.
NWK/CMCE/IC/TI/	Call_setup_supported	To test the timers of the CMCE module of the IUT, when operating in individual call mode.
NWK/CMCE/GC/	Group_call_supported	To test the behaviour of the CMCE module of the IUT, when operating in group call mode.
NWK/CMCE/GC/CA/	Group_call_supported	To test the basic capabilities of the CMCE module of the IUT, when operating in group call mode.
NWK/CMCE/GC/CA/SU/	Group_call_supported	To test the basic capabilities of the CMCE module of the IUT during call set-up, when operating in group call mode.
NWK/CMCE/GC/CA/CD/	Group_call_supported	To test the basic capabilities of the CMCE module of the IUT during call disconnection, when operating in group call mode.
NWK/CMCE/GC/BV/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT, when operating in group call mode.
NWK/CMCE/GC/BV/OC/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT during outgoing call, when operating in group call mode.
NWK/CMCE/GC/BV/CC/	User_initiated_group_call_disconnection_supported	To test the valid behaviour of the CMCE module of the IUT during colliding calls, when operating in group call mode.
NWK/CMCE/GC/BV/MA/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT during call maintenance, when operating in group call mode.
NWK/CMCE/GC/BV/MA/TC/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT during transmission control, when operating in

Test Suite Structure		
Suite Name: NWK Standards Ref.: ETS 300 392-2 [1] PICS Ref.: ETS 300 392-14 [6] PIXIT Ref.: ETS 300 394-2-2 [9] , Annex B Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
		group call mode.
NWK/CMCE/GC/BV/MA/CR/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT during call restoration, when operating in group call mode.
NWK/CMCE/GC/BV/CD/	Group_call_supported	To test the valid behaviour of the CMCE module of the IUT during call disconnection, when operating in group call mode.
NWK/CMCE/GC/TI/	Group_call_supported	To test the timers of the CMCE module of the IUT, when operating in group call mode.
NWK/MM/	Applicable_to_all_IUTs	Check the dynamic behaviour requirements of the MM protocol.
NWK/MM/CA/	Applicable_to_all_IUTs	To test the basic capabilities of the MM module of the IUT.
NWK/MM/BV/	Applicable_to_all_IUTs	To test the valid behaviour of the MM module of the IUT.
NWK/MM/BV/RE/	Applicable_to_all_IUTs	To test the valid registration behaviour of the MM module of the IUT.
NWK/MM/BV/AT/	SwMI_or_IUT_initiated_group_ID_handling_supported	To test the valid attachment/detachment of group identities behaviour of the MM module of the IUT.
NWK/MLE/	Applicable_to_all_IUTs	Check the dynamic behaviour requirements of the MLE protocol.
NWK/MLE/CA/	Applicable_to_all_IUTs	Check basic MLE protocol capabilities.
NWK/MLE/CA/CR/	Applicable_to_all_IUTs	Check cell re-selection basic features.
NWK/MLE/BV/	Individual_or_group_call_or_neighbour_cell_enquiry_supported	Check MLE valid behaviour.
NWK/MLE/BV/CR/	Individual_or_group_call_supported	Check cell re-selection procedures.
NWK/MLE/BV/NB/	Neighbour_cell_enquiry_supported	Check neighbour cell enquiry procedure.
NWK/MLE/BV/RE/	Individual_or_group_call_supported	Check CMCE call restoration after cell re-selection.
NWK/MLE/TI/	Individual_call_supported	Check timers during cell re-selection.

5.4.3.2 Test case index for layer 3

Table 26: Test case index for layer 3

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
NWK/CMCE/IC/CA/SU/	NWK_CMCE_IC_CA_SU_01	Hook_signalling_supported	Incoming individual call to IUT, On-hook/Off-hook signalling, verify IUT sends U-ALERT.
NWK/CMCE/IC/CA/SU/	NWK_CMCE_IC_CA_SU_02	Hook_signalling_supported	Incoming individual call to IUT, Hook signalling, verify IUT sends U-ALERT and U-CONNECT.
NWK/CMCE/IC/CA/SU/	NWK_CMCE_IC_CA_SU_03	Direct_signalling_supported	Incoming individual call to IUT, Direct signalling, verify IUT sends U-CONNECT.
NWK/CMCE/IC/CA/SU/	NWK_CMCE_IC_CA_SU_04	Hook_signalling_supported	IUT sends outgoing call using U-SETUP, accepts D-ALERT in response.
NWK/CMCE/IC/CA/SU/	NWK_CMCE_IC_CA_SU_05	Direct_signalling_supported	IUT sends U-SETUP for Direct signalling, individual mode outgoing call, accepts D-CONNECT.
NWK/CMCE/IC/CA/CD/	NWK_CMCE_IC_CA_CD_01	User_initiated_individual_call_disconnection_supported	Incoming call from tester, IUT initiates clearing, sending U-DISCONNECT.
NWK/CMCE/IC/CA/CD/	NWK_CMCE_IC_CA_CD_02	Individual_call_supported	Incoming call from tester, call released by tester with D-RELEASE.
NWK/CMCE/IC/CA/CD/	NWK_CMCE_IC_CA_CD_03	Individual_call_supported	Incoming call from tester, tester initiates clearing sending D-DISCONNECT, expects U-RELEASE in response.
NWK/CMCE/IC/BV/OC/	NWK_CMCE_IC_BV_OC_01	Hook_signalling_supported	IUT establishes outgoing call with hook signalling, tester replies with D-CALL-PROCEEDING, D-ALERT and then D-CONNECT.
NWK/CMCE/IC/BV/OC/	NWK_CMCE_IC_BV_OC_02	Hook_signalling_supported	IUT establishes outgoing call with hook signalling, tester replies with D-CONNECT.
NWK/CMCE/IC/BV/OC/	NWK_CMCE_IC_BV_OC_03	Direct_signalling_supported	IUT establishes outgoing call with direct signalling, tester replies with D-CALL-PROCEEDING followed by D-CONNECT.
NWK/CMCE/IC/BV/CC/	NWK_CMCE_IC_BV_CC_01	Hook_signalling_supported	Call Collision between 2 calls using hook signalling - IUT keeps one and releases the other.
NWK/CMCE/IC/BV/CC/	NWK_CMCE_IC_BV_CC_02	Direct_signalling_supported	Call Collision between 2 calls using direct signalling - IUT keeps one and releases the other.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_01	Direct_signalling_supported	Direct signalling call established, check IUT's u-plane is transmitting.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_02	Call_setup_supported	Call established with TX permission for IUT, IUT sends U-TX-CEASED and stops transmitting.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_03	Call_setup_supported	Call established with TX permission for IUT, IUT sends TX-CEASED, receives TX-GRANTED but granted to another user, check IUT doesn't transmit.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_04	Call_setup_supported	Call established with no TX permission for IUT, IUT requests and is granted TX permission, check IUT does transmit.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_05	Call_setup_supported	Call established to IUT, no TX permission granted, IUT requests TX permission, is refused, check IUT is still receiving.
NWK/CMCE/IC/BV/MA/TC/	NWK_CMCE_IC_BV_MA_TC_06	Hook_signalling_supported	IUT sends outgoing call indicating Hook signalling, receives D-ALERT and D-CONNECT with TX permission granted to another user.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_01	Hook_signalling_supported	Test Duration of T301, IUT should clear call if it doesn't receive D-CONNECT-ACK before T301 expires, during incoming individual call, hook signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_02	Hook_signalling_supported	Test Duration of T310 for individual call, hook signalling. IUT should clear call if call doesn't end before T310 expires. T310 set by tester.

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_03	Direct_signalling_supported	Test Duration of T301, IUT should clear call if it doesn't receive D-CONNECT-ACK before T301 expires, during incoming individual call, direct signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_04	Direct_signalling_supported	Test Duration of T310 for individual call, direct signalling. IUT should clear call if call doesn't end before T310 expires. T310 set by tester.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_05	Hook_signalling_supported	Test duration of T303, IUT should clear call if it doesn't receive a response to its U-SETUP before T303 expires, during outgoing individual call using hook signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_06	Hook_signalling_supported	Test duration of T302, IUT should clear call if it doesn't receive a D-CONNECT in response to its U-SETUP before T302 expires, during outgoing individual call using hook signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_07	Direct_signalling_supported	Test duration of T303, IUT should clear call if it doesn't receive a response to its U-SETUP before T303 expires, during outgoing individual call using direct signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_08	Direct_signalling_supported	Test duration of T302, IUT should clear call if it doesn't receive a D-CONNECT in response to its U-SETUP before T302 expires, during outgoing individual call using direct signalling.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_10	Hook_signalling_supported	Receive outgoing hook signalling call, send a D-ALERT in response, but before continuing with a D-CONNECT, restart the call set-up timer T302 by sending a D-INFO.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_11	Call_setup_supported	Test call restoration timer T306.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_12	User_initiated_individual_call_disconnection_supported	Test call disconnect timer T308.
NWK/CMCE/IC/TI/	NWK_CMCE_IC_TI_13	Call_setup_supported	Establish incoming call, receive a U-CONNECT in response, respond with a D-CONNECT-ACK, restart the call time-out T310 by sending a D-INFO, and check that T310 is reset.
NWK/CMCE/GC/CA/SU/	NWK_CMCE_GC_CA_SU_01	Group_call_supported	IUT establishes outgoing point to multipoint call with direct signalling, tester replies with D-CALL-PROCEEDING followed by D-CONNECT.
NWK/CMCE/GC/CA/CD/	NWK_CMCE_GC_CA_CD_01	Group_call_supported	Call disconnection capability test.
NWK/CMCE/GC/BV/OC/	NWK_CMCE_GC_BV_OC_01	Group_call_supported	Outgoing call, normal case.
NWK/CMCE/GC/BV/CC/	NWK_CMCE_GC_BV_CC_01	User_initiated_group_call_disconnection_supported	Colliding calls.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_01	Group_call_supported	Test behaviour after giving TX Granted permission in D-CONNECT.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_02	Group_call_supported	Call established with TX permission for IUT, IUT sends U-TX-CEASED and stops transmitting.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_03	Group_call_supported	Call established with TX permission for IUT, IUT sends TX-CEASED, receives TX-GRANTED but granted to another user, check IUT doesn't transmit.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_04	Group_call_supported	Check that IUT can make TX request and accepts TX Granted.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_05	Group_call_supported	Check that IUT behaves correctly having received TX Not Granted to its TX Grant request.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_06	Group_call_supported	Check IUT behaviour after D-TX INTERRUPT where TX is granted to another user.
NWK/CMCE/GC/BV/MA/TC/	NWK_CMCE_GC_BV_MA_TC_07	Group_call_supported	Check IUT behaviour after D-TX WAIT reception.
NWK/CMCE/GC/BV/MA/CR/	NWK_CMCE_GC_BV_MA_CR_01	Group_call_supported	Call restoration.

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
NWK/CMCE/GC/BV/CD/	NWK_CMCE_GC_BV_CD_01	Group_call_supported	Call released by tester with D-RELEASE.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_01	Group_call_supported	Test call length timer T310 by pressing the IUT tangent.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_02	Group_call_supported	Test call initiated timer T303.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_03	Group_call_supported	Test call set-up timer T302.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_04	Group_call_supported	Test call length timer T310 using outgoing call.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_05	Group_call_supported	Test call time-out timer T310 reset after D-INFO PDU.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_06	Group_call_supported	Test call restoration timer T307.
NWK/CMCE/GC/TI/	NWK_CMCE_GC_TI_07	Group_call_supported	Test call transmission timer T311.
NWK/MM/CA/	NWK_MM_CA_02	Applicable_to_all_IUTs	Power on with registration capability.
NWK/MM/CA/	NWK_MM_CA_03	Direct_call_setup_supported	User initiated registration capability.
NWK/MM/BV/RE/	NWK_MM_BV_RE_01	Applicable_to_all_IUTs	Registration to home network.
NWK/MM/BV/RE/	NWK_MM_BV_RE_02	Applicable_to_all_IUTs	Roaming registration.
NWK/MM/BV/RE/	NWK_MM_BV_RE_07	Applicable_to_all_IUTs	SwMI initiated registration.
NWK/MM/BV/AT/	NWK_MM_BV_AT_01	SwMI_initiated_group_ID_handling_with_report_request_supported	Check SwMI initiated attachment of group IDs.
NWK/MM/BV/AT/	NWK_MM_BV_AT_02	SwMI_initiated_group_ID_handling_with_report_request_supported	Check SwMI initiated detachment of group IDs.
NWK/MM/BV/AT/	NWK_MM_BV_AT_03	IUT_initiated_group_ID_handling_supported	Check IUT initiated attachment of group IDs.
NWK/MM/BV/AT/	NWK_MM_BV_AT_04	IUT_initiated_group_ID_handling_supported	Check IUT initiated detachment of group IDs.
NWK/MLE/CA/CR/	NWK_MLE_CA_CR_01	Applicable_to_all_IUTs	Check initial cell selection.
NWK/MLE/CA/CR/	NWK_MLE_CA_CR_03	Individual_call_supported	Check unannounced cell re-selection.
NWK/MLE/CA/CR/	NWK_MLE_CA_CR_04	Individual_call_supported	Check announced type 3 cell re-selection.
NWK/MLE/BV/CR/	NWK_MLE_BV_CR_01	Individual_call_supported	Check cell re-selection when a radio link failure occurs.
NWK/MLE/BV/CR/	NWK_MLE_BV_CR_02	Group_call_supported	Check unannounced cell re-selection with CMCE call restoration.
NWK/MLE/BV/CR/	NWK_MLE_BV_CR_03	Individual_call_supported	Check announced type 3 cell re-selection with CMCE call restoration.
NWK/MLE/BV/NB/	NWK_MLE_BV_NB_02	Individual_call_and_neighbour_cell_enquiry_supported	Check that neighbour cell enquiry is used only when supported by the serving cell.
NWK/MLE/BV/RE/	NWK_MLE_BV_RE_01	Group_call_supported	Check CMCE call restoration when cell re-selection within the same location area.
NWK/MLE/BV/RE/	NWK_MLE_BV_RE_03	Individual_call_supported	Check CMCE call restoration that is failed by the tester.
NWK/MLE/TI/	NWK_MLE_TI_01	Individual_call_supported	Check type 3 cell re-selection with time-out of timer T.370.
NWK/MLE/TI/	NWK_MLE_TI_02	Individual_call_supported	Check announced type 3 re-selection with BS controlled delay.

5.4.3.3 Test case selection expression definitions for layer 3

Table 27: Test case selection expression definitions for layer 3

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
Applicable_to_all_IUTs	TBR_RT_UM_MS	IUT is TETRA V+D MS.
CMCE_supported	PIC_CMCE_SUPPORTED	IUT supports CMCE.
Individual_call_supported	PIC_INDIVIDUAL_CALL_SUPPORTED	IUT supports individual call.
Group_call_supported	PIC_GROUP_CALL_SUPPORTED	IUT supports group call.
Hook_signalling_supported	PIC_ON_OFF_HOOK_SIGNALLING_SUPPORTED	IUT supports on/off hook signalling.
Direct_signalling_supported	PIC_DIRECT_SETUP_SIGNALLING_SUPPORTED	IUT supports direct setup signalling.
Call_setup_supported	PIC_DIRECT_SETUP_SIGNALLING_SUPPORTED OR PIC_ON_OFF_HOOK_SIGNALLING_SUPPORTED	Used in MM and CMCE.
Direct_call_setup_supported	PIC_DIRECT_SETUP_SIGNALLING_SUPPORTED	Used in MM.
User_initiated_group_call_disconnection_supported	PIC_USER_INITIATED_GROUP_CALL_DISCONNECTION_SUPPORTED	Used in CMCE.
User_initiated_individual_call_disconnection_supported	PIC_USER_INITIATED_INDIVIDUAL_CALL_DISCONNECTION_SUPPORTED	Used in CMCE.
SwMI_initiated_group_ID_handling_supported	PIC_MM_SWMI_INITIATED_GID_HANDLING_SUPPORTED	Used in MM.
SwMI_initiated_group_ID_handling_with_report_request_supported	PIC_MM_SWMI_INITIATED_GID_REPORT_REQUEST_SUPPORTED	Used in MM.
IUT_initiated_group_ID_handling_supported	PIC_MM_IUT_INITIATED_GID_HANDLING_SUPPORTED	Used in MM.
SwMI_or_IUT_initiated_group_ID_handling_supported	PIC_MM_SWMI_INITIATED_GID_HANDLING_SUPPORTED OR PIC_MM_IUT_INITIATED_GID_HANDLING_SUPPORTED	Used in MM.
Neighbour_cell_enquiry_supported	PIC_NEIGHBOUR_CELL_ENQUIRY_SUPPORTED	Used in MLE.
Individual_call_and_neighbour_cell_enquiry_supported	(PIC_INDIVIDUAL_CALL_SUPPORTED AND PIC_NEIGHBOUR_CELL_ENQUIRY_SUPPORTED)	Used in MLE.
Individual_or_group_call_supported	PIC_INDIVIDUAL_CALL_SUPPORTED OR PIC_GROUP_CALL_SUPPORTED	Used in MLE.
Individual_or_group_call_or_neighbour_cell_enquiry_supported	PIC_INDIVIDUAL_CALL_SUPPORTED OR PIC_GROUP_CALL_SUPPORTED OR PIC_NEIGHBOUR_CELL_ENQUIRY_SUPPORTED	Used in MLE.

5.4.3.4 Test suite parameter definitions for layer 3

Table 28: Test suite parameter definitions for layer 3

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
TBR_RT_UM_MS	BOOLEAN	A.3.1, table A.2/2	TETRA V+D MS.
PIC_CMCE_SUPPORTED	BOOLEAN	A.3.1, table A.4/1	CMCE supported.
PIC_ON_OFF_HOOK_SIGNALLING_SUPPORTED	BOOLEAN	A.3.4.1, table A.29/1	Indicate whether on/off hook signalling is supported.
PIC_DIRECT_SETUP_SIGNALLING_SUPPORTED	BOOLEAN	A.3.4.1, table A.29/2	Indicate if direct set-up signalling is supported.
PIC_INDIVIDUAL_CALL_SUPPORTED	BOOLEAN	A.3.4.1, table A.29/1	IUT supports individual call.
PIC_GROUP_CALL_SUPPORTED	BOOLEAN	A.3.4.1, table A.29/2	IUT supports group call.
PIC_USER_INITIATED_INDIVIDUAL_CALL_DISCONNECTION_SUPPORTED	BOOLEAN	A.3.4.1, table A.37/1	IUT supports user initiated individual call disconnection.
PIC_USER_INITIATED_GROUP_CALL_DISCONNECTION_SUPPORTED	BOOLEAN	A.3.4.1, table A.38/1	IUT supports user initiated group call disconnection.
PIC_MM_SWMI_INITIATED_GID_HANDLING_SUPPORTED	BOOLEAN	A.3.4.2, table A.45/1	SwMI initiated group ID attachment/detachment.
PIC_MM_SWMI_INITIATED_GID_REPORT_REQUEST_SUPPORTED	BOOLEAN	A.3.4.2, table A.45/2	SwMI initiated group ID attachment/detachment report request.
PIC_MM_IUT_INITIATED_GID_HANDLING_SUPPORTED	BOOLEAN	A.3.4.2, table A.45/3	IUT initiated group ID attachment/detachment.
PIC_NEIGHBOUR_CELL_ENQUIRY_SUPPORTED	BOOLEAN	A.3.4.3, table A.47/3	Neighbour cell enquiry supported.
PIX_CHANNEL_1	MainCarrierNoType	B.2.3.3, table B.5/1	Define the channel that the MS initially tries to camp on to.
PIX_CHANNEL_2	MainCarrierNoType	B.2.3.3, table B.5/2	Another channel that the MS is capable of receiving.
PIX_COUNTRY_CODE	MCC_Type	B.2.3.2, table B.4/1; B.2.3.3, table B.5/3	Home country code of the MS.
PIX_NETWORK_CODE	MNC_Type	B.2.3.2, table B.4/2; B.2.3.3, table B.5/4	Home network code of the MS.
PIX_LOCATION_AREA	LocationAreaType	B.2.3.2, table B.4/3; B.2.3.3, table B.5/5	Home location area of the MS.
PIX_NEW_LOCATION_AREA	LocationAreaType	B.2.3.2, table B.4/4; B.2.3.3, table B.5/6	A location area outside the MS home location area.
PIX_MS_TEI	TEI_Type	B.2.3.2, table B.4/5	TEI of the IUT, 60 bits.
PIX_MS_ITSI	ITSI_Type	B.2.3.1, table B.3/4; B.2.3.2, table B.4/6; B.2.3.3, table B.5/7	ITSI of the IUT.
PIX_T303	INTEGER	B.2.3.1, table B.3/1	Duration of the T303 in the IUT in seconds.
PIX_T308	INTEGER	B.2.3.1, table B.3/2	Duration of the T308 in the IUT in seconds.
PIX_T311	INTEGER	B.2.3.1, table B.3/3	Duration of the T311 in the IUT in seconds.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.4.4 Security test specification

5.4.4.1 Test suite structure for Um security

Table 29: Test suite structure for Um security

Test Suite Structure		
Suite Name: Security Standards Ref.: ETS 300 392-7 [2] PICS Ref.: ETS 300 394-5-1 [12] PIXIT Ref.: ETS 300 394-5-3 [14], Annex C Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
Sec_VD/	VD_Security_Supp	To test the behaviour of the Voice + Data security module of the IUT.
Sec_VD/AU/	VD_Auth_Supp	To test the V+D security module of the IUT, when operating the authentication at layer 3.
Sec_VD/AU/BV/	VD_Auth_Supp	To test the valid behaviour of the V+D security module of the IUT, when operating the authentication.
Sec_VD/AU/BV/II/	VD_Infrastructure_Auth_Supp	To test the valid behaviour of infrastructure initiated authentication procedures of the IUT for the V+D security protocols.
Sec_VD/AU/BV/TI/	VD_Terminal_Auth_Supp	To test the valid behaviour of terminal initiated authentication procedures of the V+D security protocols.
Sec_VD/AU/BV/REG/	VD_Auth_Supp	To test the valid behaviour of the authentication procedures of the V+D security protocols when authentication is initiated during registration.
Sec_VD/AU/BV/REG/TEI/	VD_Auth_Supp	To test the valid behaviour of the authentication procedures of the V+D security protocols when authentication is initiated during registration.
Sec_VD/OTAR/	VD_OTAR_Supp	To test the V+D security module of the IUT, when operating the OTAR procedures at layer 3.
Sec_VD/OTAR/BV/	VD_OTAR_Supp	To test the valid behaviour of OTAR scenarios of the V+D security protocols.
Sec_VD/OTAR/BV/CCK/	VD_OTAR_CCK_Supp	To test the valid behaviour of OTAR scenarios for CCK of the V+D security protocols.
Sec_VD/OTAR/BV/GCK/	VD_OTAR_GCK_Supp	To test the valid behaviour of OTAR scenarios for GCK of the V+D security protocol.
Sec_VD/OTAR/BV/SCK/	VD_OTAR_SCK_Supp	To test the valid behaviour of OTAR scenarios for SCK of the V+D security protocols.
Sec_VD/SED/	VD_SED_Supp	To test the V+D security module of the IUT, when operating the enable and disable procedures at layer 3.
Sec_VD/SED/BV/	VD_SED_Supp	To test the V+D security module of the IUT, when operating the valid behaviour of the enable and disable procedures.
Sec_VD/SED/PD/	VD_SED_Supp	To test the V+D security module of the IUT, when operating the permanent disabling procedures.
Sec_VD/SED/BV/EN/	VD_SED_Supp	To test the V+D security module of the IUT, when operating the enable procedures.

5.4.4.2 Test case index for Um security

Table 30: Test case index for Um security

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
Sec_VD/AU/BV/II/	Sec_VD_AU_BV_II_01	VD_Infrastructure_Auth_Supp	SwMI (testset) authenticates MS (IUT).
Sec_VD/AU/BV/II/	Sec_VD_AU_BV_II_02	VD_Infrastructure_Auth_Supp	Mutual authentication initiated by SwMI (testset).
Sec_VD/AU/BV/TI/	Sec_VD_AU_BV_TI_01	VD_Terminal_Auth_Supp	MS (IUT) authenticates SwMI (testset).
Sec_VD/AU/BV/TI/	Sec_VD_AU_BV_TI_02	VD_Terminal_Auth_IMP_Supp	Mutual authentication initiated by MS (IUT).
Sec_VD/AU/BV/REG/	Sec_VD_AU_BV_REG_01	VD_Infrastructure_Auth_Supp	SwMI (testset) authenticates MS (IUT) during registration.
Sec_VD/AU/BV/REG/	Sec_VD_AU_BV_REG_02	VD_Terminal_Auth_LU_IMP_Supp	MS (IUT) authenticates SwMI (testset) during registration.
Sec_VD/AU/BV/REG/TEI/	Sec_VD_AU_REF_TEI_03	VD_Terminal_Auth_LU_IMP_Supp	Authentication initiated by MS (IUT) during registration including TEI exchange and made mutual by SwMI (test system).
Sec_VD/AU/BV/REG/TEI/	Sec_VD_AU_REF_TEI_04	VD_Infrastructure_Auth_Supp	SwMI (test system) authentication initiated during registration and made mutual by the MS (IUT) with TEI exchange.
Sec_VD/OTAR/BV/CCK/	Sec_VD_OTAR_BV_CCK_01	VD_OTAR_CCK_IMP_Supp	SwMI (testset) initiated OTAR current CCK provision.
Sec_VD/OTAR/BV/CCK/	Sec_VD_OTAR_BV_CCK_03	VD_OTAR_CCK_request_IMP_Supp	MS (IUT) initiated OTAR current CCK provision.
Sec_VD/OTAR/BV/GCK/	Sec_VD_OTAR_BV_GCK_01	VD_OTAR_GCK_request_Supp	MS (IUT) requests provision for GCK.
Sec_VD/OTAR/BV/GCK/	Sec_VD_OTAR_BV_GCK_02	VD_OTAR_GCK_Supp	SwMI (testset) provides GCK to MS (IUT).
Sec_VD/OTAR/BV/SCK/	Sec_VD_OTAR_BV_SCK_01	VD_OTAR_SCK_Supp	SwMI (testset) provides SCK to MS (IUT).
Sec_VD/SED/PD/	Sec_VD_SED_BV_PD_02	VD_Infrastructure_Auth_Supp	Permanently disable terminal (ITSI) with authentication.
Sec_VD/SED/BV/EN/	Ses_VD_SED_BV_EN_01	VD_Infrastructure_Auth_Supp	Enable terminal (TEI) with authentication.
Sec_VD/SED/BV/EN/	Sec_VD_SED_BV_EN_05	VD_SED_Non_Auth_Enable_Supp	Enable equipment (ITSI) without authentication.

5.4.4.3 Test case selection expression definitions for Um security

Table 31: Test case selection expression definitions for Um security

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
VD_Security_Supp	PIC_VD_SEC_SUPP AND PIX_VD_L3	IUT supports V+D security.
VD_Auth_Supp	PIC_VD_AUTH_SUPP AND PIX_VD_L3	IUT supports authentication.
VD_Infrastructure_Auth_Supp	PIC_VD_IAUTH_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_VD_L3	Infrastructure initiated authentication supported.
VD_Terminal_Auth_Supp	PIC_VD_TAUTH_SUPP AND PIX_IMP_AUTHENTICATION_DEMAND AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_VD_L3	Terminal initiated authentication supported.
VD_OTAR_Supp	PIC_VD_OTAR_SUPP AND PIX_VD_L3	IUT supports OTAR.
VD_OTAR_CCK_request_IMP_Supp	PIC_VD_OTAR_CCK_SUPP AND PIC_VD_OTAR_CCK_DEMAND_PDU_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_IMP_OTAR_CCK_DEMAND_Normal AND PIX_VD_L3	IUT request CCK supported.
VD_OTAR_CCK_IMP_Supp	PIC_VD_OTAR_CCK_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_VD_L3	CCK supported.
VD_OTAR_CCK_Supp	PIC_VD_OTAR_CCK_SUPP AND PIX_VD_L3	CCK supported.
VD_OTAR_GCK_request_Supp	PIC_VD_OTAR_GCK_SUPP AND PIC_VD_OTAR_GCK_DEMAND_PDU_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_IMP_OTAR_GCK_DEMAND_Normal AND PIX_VD_L3	IUT request GCK supported.
VD_OTAR_GCK_Supp	PIC_VD_OTAR_GCK_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_VD_L3	GCK supported.
VD_OTAR_SCK_Supp	PIC_VD_OTAR_SCK_SUPP AND PIX_IMP_LOCATION_UPDATE_Type AND PIX_VD_L3	SCK supported.
VD_SED_Supp	PIC_VD_SED_SUPP AND PIX_VD_L3 AND PIX_IMP_LOCATION_UPDATE_Type	Enable/Disable procedures supported.
VD_SED_Non_Auth_Enable_Supp	PIC_VD_SED_Enable_Non_Auth_SUPP AND PIX_VD_L3 AND PIX_IMP_LOCATION_UPDATE_Type	Enable without authentication procedure supported.

5.4.4.4 Test suite parameter definitions for Um security

Table 32: Test suite parameter definitions for Um security

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
PIC_VD_SEC_SUPP	BOOLEAN	A.3.1, table A.2 /7	V+D security supported.
PIC_VD_AUTH_SUPP	BOOLEAN	A.3.5, table A.52/1	Authentication supported.
PIC_VD_TAUTH_SUPP	BOOLEAN	A.3.5.1, table A.53/2	Terminal initiated authentication supported.
PIC_VD_IAUTH_SUPP	BOOLEAN	A.3.5.1, table A.53/1	Infrastructure initiated authentication supported.
PIC_VD_OTAR_SUPP	BOOLEAN	A.3.5, table A.52/2	OTAR supported.
PIC_VD_OTAR_CCK_SUPP	BOOLEAN	A.3.5.2, table A.56/1	CCK for OTAR.
PIC_VD_OTAR_GCK_SUPP	BOOLEAN	A.3.5.2, table A.56/2	GCK for OTAR.
PIC_VD_OTAR_SCK_SUPP	BOOLEAN	A.3.5.2, table A.56/3	SCK for OTAR.
PIC_VD_OTAR_CCK_DEMAND_PDU_SUPP	BOOLEAN	A.3.5.2, table A.57/6	True if the IUT supports the CCK DEMAND PDU.
PIC_VD_OTAR_GCK_DEMAND_PDU_SUPP	BOOLEAN	A.3.5.2, table A.57/8	True if the IUT supports the GCK DEMAND PDU.
PIC_VD_SED_SUPP	BOOLEAN	A.3.5, table A.52/3	Secure enable/disable supported.
PIC_VD_SED_Enable_Non_Auth_SUPP	BOOLEAN	A.3.5.3, table A.59/5	True if the IUT supports enabling without authentication.
PIX_IMP_AUTHENTICATION_DEMAND	BOOLEAN	B.2.4, table B.6/1	Sending of U-AUTHENTICATION DEMAND PDU implemented.
PIX_IMP_LOCATION_UPDATE_Type	BOOLEAN	B.2.4, table B.6/2	Sending of U-LOCATION UPDATE PDU implemented.
PIX_IMP_LOCATION_UPDATE_DEMAND_AuthReq	BOOLEAN	B.2.4, table B.6/3	Sending of U-LOCATION UPDATE PDU containing an authentication demand implemented.
PIX_IMP_OTAR_CCK_DEMAND_Normal	BOOLEAN	B.2.4, table B.6/4	Sending of U-OTAR CCK DEMAND PDU implemented.
PIX_IMP_OTAR_GCK_DEMAND_Normal	BOOLEAN	B.2.4, table B.6/5	Sending of U-OTAR GCK DEMAND PDU implemented.
PIX_IMP_OTAR_SCK_DEMAND_1	BOOLEAN	B.2.4, table B.6/6	Sending of U-OTAR SCK DEMAND PDU requesting the provision of 1 SCK implemented.
PIX_VD_L3	BOOLEAN	B.2.4, table B.7/1	Testing the layer 3 of the security Voice + Data protocol.
PIX_MS_ITSI	TSI_Type	B.2.4, table B.8/1	ITSI of the IUT.
PIX_TEI	TEI_Type	B.2.4, table B.8/2	TEI.
PIX_GSSI	GSSI_Type	B.2.4, table B.8/3	GSSI.
PIX_RAND1	RandomChallengeType	B.2.4, table B.9/1	Value of Random challenge (RAND1).
PIX_RS	RandomSeedType	B.2.4, table B.9/2	Value of the Random seed (RS).
PIX_RES2	ResponseValueType	B.2.4, table B.9/3	Value of the result RES2.
PIX_CURRENT_CCK	CCK_IdType	B.2.4, table B.10/1	Value of the CCK of the current LA.
PIX_OTHER_CCK	CCK_IdType	B.2.4, table B.10/2	Value of the CCK of another LA.
PIX_CURRENT_SCCK	SealedKeyType	B.2.4, table B.10/3	Value of the sealed SCCK of the current LA.
PIX_OTHER_SCCK	SealedKeyType	B.2.4, table B.10/4	Value of the sealed SCCK of another LA.
PIX_SCKN	SCK_NbrType	B.2.4, table B.10/5	SCK number.

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
PIX_SCK_VN	SCK_VersionNbrType	B.2.4, table B.10/6	SCK version number.
PIX_SSCK	SealedKeyType	B.2.4, table B.10/7	Sealed SCK.
PIX_GCK_VN	GCK_VersionNbrType	B.2.4, table B.10/8	GCK version number.
PIX_SGCK	SealedKeyType	B.2.4, table B.10/9	Sealed GCK.
PIX_CURRENT_LA	LocationAreaType	B.2.4, table B.10/10	Current location area.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.5 Ud air interface test specification

5.5.1 Physical layer test specification

5.5.1.1 Test case index for physical layer

Table 33: Test case index for physical layer

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.1.1.2 a) and F.5, table F.2	8.1, 8.1.1 a), b), b2) and d)	Dual_Ud_Um	To test that the output power corresponds to the declared single or highest power class.
7.1.1.2 a) and F.5, table F.2	8.1, 8.1.1 a), b), b2) and d), and F.4, table F.1	DO-MS	To test that the output power corresponds to the declared single or highest power class.
7.1.1.2 a) and F.5, table F.2	8.1 and 8.1.1 c)	Dual_Ud_Um_Multiple_Class	To test that the output power corresponds to the declared lower power class(es).
7.1.1.2 a) and F.5, table F.2	8.1, 8.1.1 c) and F.4, table F.1	DO-MS_Multiple Class	To test that the output power corresponds to the declared lower power class(es).
7.1.2.2	8.2	DO-MS	To test the output power in the non-active transmit state.
7.1.3.2	8.3 and F.4, table F.1	DO-MS	To test the unwanted conducted emission over the useful part of the burst.
7.1.4.2	8.4	DO-MS	To test the unwanted conducted emission during switching transients.
7.1.5.2 and F.5, table F.2	8.5	Applicable_to_all_Ud_IUTs	To test the unwanted conducted discrete spurious and wideband noise emission far from the carrier.
7.1.6.2	8.6	DO-MS	To test the unwanted radiated emission in the active transmit state.
7.1.7.2	8.7 and 8.7.1	DO-MS	To test the unwanted conducted emission during LCH.
7.1.8.2.1	8.8 and 8.8.1	DO-MS	To test the MS transmitter intermodulation attenuation.
7.2.2.2 and F.5, table F.2	9.2 and 9.2.1	DO-MS	To test the nominal error rate. ETS 300 394-1 [7], table A.2; nominal error and F.5, table F.2: - TCH/7,2, DR50, - 85 dBm, - TCH/7,2, STAT, - 20 dBm.
7.2.3.2 and F.5, table F.2	9.3 and 9.3.1	DO-MS	To test the dynamic reference sensitivity performance. ETS 300 394-1 [7], table A.2; sensitivity and F.5, table F.2: - SCH/F, DR50, - 103 (- 97) dBm, - SCH/S, DR50, - 103 dBm.
7.2.3.2 and F.5, table F.2	9.3 and 9.3.1	DO-MS_Protected_Data	To test the dynamic reference sensitivity performance of a DMO MS supporting protected circuit mode data. ETS 300 394-1 [7], table A.2; sensitivity and F.5, table F.2: - TCH/2,4, N=1, DR50, - 103 dBm.
7.2.3.2 and F.5, table F.2	9.3 and 9.3.3	DO-MS	To test the dynamic reference sensitivity performance of an MS. ETS 300 394-1 [7], table A.11 and F.5, table F.2: - SCH/F, DR50, - 103 dBm.
7.2.4.2 and F.5, table F.2	9.4 and 9.4.1	DO-MS	To test the reference interference performance ETS 300 394-1 [7], table A.2 and F.5, table F.2: - co-channel interference, - adjacent channel interference.
7.2.5.2 and F.5, table F.2	9.5 and 9.5.1	DO-MS	To test the blocking characteristics ETS 300 394-1 [7], table A.2; blocking and F.5, table F.2.
7.2.6.2 and F.5, table F.2	9.6	DO-MS	To test the spurious response rejection ETS 300 394-1 [7], table A.2; spurious response and F.5, table F.2.

Test Case Index			
Test case limit value reference (note 1)	**Test method reference (note 2)**	**Selection reference**	**Description**
7.2.7.2 and F.5, table F.2	9.7 and 9.7.1	DO-MS	To test the intermodulation response rejection ETS 300 394-1 [7], table A.2; intermodulation and F.5, table F.2.
7.2.8.2	9.8	DO-MS	To test the unwanted conducted emission.
7.2.9.2	9.9	DO-MS	To test the unwanted radiated emission.
7.3.1.2	10.1, 10.1.1 and 10.1.3	DO-MS	To test the modulation accuracy.
F.6.2.1	F.6.2.2	Applicable_to_all_Ud_IUTs	To test the transmitter output power versus time within a burst.
F.6.3.1	F.6.3.2	Applicable_to_all_Ud_IUTs	To test the RF frequency accuracy.
F.6.4.2	F.6.4.3	Applicable_to_all_Ud_IUTs	To test the DM synchronization accuracy.
NOTE 1: The test case limit values, as referenced, are specified in ETS 300 394-1 [7], clause 7 and Annex F. NOTE 2: The test methods, as referenced, are specified in ETS 300 394-1 [7], clauses 8 to 10 and Annex F.			

5.5.1.2 Test case selection expression definitions for physical layer

Table 34: Test case selection expression definitions for physical layer

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
Applicable_to_all_Ud_IUTs	A.1/2	TETRA DMO equipment.
Dual_Ud_Um	A.1/2 AND A.1/1	DMO equipment also supporting trunked (V+D) mode
DO-MS	A.1/2 AND NOT A.1/1	DMO-only equipment not supporting trunked (V+D) mode
DO-MS_Protected_Data	A.1/2 AND NOT A.1/1 AND A.70/1	DMO-only equipment supporting protected circuit mode data.
Dual_Ud_Um_Multiple_Class	A.1/2 AND A.1/1 AND A.70/2	Dual mode DMO / V+D equipment supporting more than one power class
DO-MS_Multiple Class	A.1/2 AND NOT A.1/1 AND A.70/2	DMO-only equipment supporting more than one power class
Detailed Comments The selection expressions given in the Selection Expression-column are Boolean expressions, referring to the declarations made in requirement tables in annex A in the present document.		

5.5.2 Layer 2 test specification

5.5.2.1 Test suite structure for layer 2

Table 35: Test suite structure for layer 2

Test Suite Structure		
Suite Name: DMO/MSMS/MAC Standards Ref.: ETS 300 396-3 [16] PICS Ref.: ETS 300 396-8-1 [21] PIXIT Ref.: ETS 300 394-4-2 [23] , Annex B Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
DMO_MSMS_MAC/	MAC_supported	Check the dynamic requirements of the MAC layer
DMO_MSMS_MAC/BV/	MAC_supported	Check the valid behaviour of the MAC layer.
DMO_MSMS_MAC/BV/CU/	Initiate_CM_or_SDS_Call	To test DM channel usage procedures of the DM-MAC entity.
DMO_MSMS_MAC/BV/SM/	Initiate_CM_Call	To test the signalling procedures of the DM-MAC entity.

5.5.2.2 Test case index for layer 2

Table 36: Test case index for layer 2

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
DMO_MSMS_MAC/BV/CU/	DMO_MSMS_MAC_BV_CU_02	Initiate_CM_Call	Transmission of the DM-OCCUPIED SDU when the channel is busy.
DMO_MSMS_MAC/BV/CU/	DMO_MSMS_MAC_BV_CU_04	Initiate_CM_Call	The sending of the DM-RESERVED SDU stopped when the reservation period expired.
DMO_MSMS_MAC/BV/CU/	DMO_MSMS_MAC_BV_CU_06	Initiate_CM_or_SDS_Call	Specified number of re-transmission is fulfilled with respect to the frame count down element.
DMO_MSMS_MAC/BV/SM/	DMO_MSMS_MAC_BV_SM_09	Initiate_CM_Call	Pre-emption flag in the DM-OCCUPIED SDU.
DMO_MSMS_MAC/BV/SM/	DMO_MSMS_MAC_BV_SM_10	Initiate_CM_Call	Pre-emption flag in the DM-RESERVED SDU.

5.5.2.3 Test case selection expression definitions for layer 2

Table 37: Test case selection expression definitions for layer 2

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
MAC_supported	PIC_MAC_SUPPORTED	IUT supports MAC.
Initiate_CM_Call	(PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_SYNC_SETUP) OR (PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_SYNC_SETUP_PRES)	IUT supports initiation of a CM call with or without presence check.
Initiate_CM_or_SDS_Call	(PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_SYNC_SETUP) OR (PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_SYNC_SETUP_PRES) OR (PIC_SEND_U_SDS AND PIX_IMP_SYNC_SDS_UDATA) OR (PIC_SEND_A_SDS AND PIX_IMP_SYNC_SDS_DATA)	IUT supports initiation of a CM call with or without presence check or initiation of an SDS call with or without acknowledgement.

5.5.2.4 Test suite parameter definitions for layer 2

Table 38: Test suite parameter definitions for layer 2

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
PIC_MAC_SUPPORTED	BOOLEAN	A.4.2.1, table A.63/2	MAC supported.
PIC_SETUP_NewCall_FrameCountDown	INTEGER	A.4.2.3.2, table A.79/1	Value of the number of frame transmission for the DM-SETUP PDU for a new call. [2]
PIC_SETUP_PRES_NewCall_FrameCountDown	INTEGER	A.4.2.3.2, table A.79/2	Value of the number of frame transmission for the DM-SETUP PRES PDU for a new call. [2]
PIC_SDS_DATA_NewCall_FrameCountDown	INTEGER	A.4.2.3.2, table A.79/3	Value of the number of frame transmission for the DM-SDS DATA PDU for a new call. [2]
PIC_SDS_UDATA_NewCall_FrameCountDown	INTEGER	A.4.2.3.2, table A.79/4	Value of the number of frame transmission for the DM-SDS UDATA PDU for a new call. [2]
PIC_CALL_SETUP_NO_PRESENCE_CHECK	BOOLEAN	A.4.2.4, table A.80/1	IUT supports outgoing call setup without presence check.
PIC_CALL_SETUP_PRESENCE_CHECK	BOOLEAN	A.4.2.4, table A.80/3	IUT supports outgoing call setup with presence check.
PIC_SEND_U_SDS	BOOLEAN	A.4.2.4, table A.81/1	IUT supports sending of unacknowledged data service
PIC_SEND_A_SDS	BOOLEAN	A.4.2.4, table A.81/2	IUT supports sending of acknowledge data service
PIX_IMP_SYNC_SETUP	BOOLEAN	B.3.2, table B.12/1	It is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SETUP SDU.
PIX_IMP_SYNC_SETUP_PRES	BOOLEAN	B.3.2, table B.12/2	It is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SETUP PRES SDU.
PIX_IMP_SYNC_SDS_DATA	BOOLEAN	B.3.2, table B.12/3	It is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SDS DATA SDU.
PIX_IMP_SYNC_SDS_UDATA	BOOLEAN	B.3.2, table B.12/4	It is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SDS UDATA SDU.
PIX_MS_SSI	SSI_Type	B.3.2, table B.13/3	SSI of the IUT
PIX_TESTER_MNI	MNI_Type	B.3.2, table B.13/2	MNI of the tester
PIX_TESTER_SSI	SSI_Type	B.3.2, table B.13/3	SSI of the tester
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.5.3 Layer 3 test specification

5.5.3.1 Test suite structure for layer 3

Table 39: Test suite structure for layer 3

Test Suite Structure		
Suite Name: DMO/MSMS Standards Ref.: ETS 300 396-3 [16] PICS Ref.: ETS 300 396-8-1 [21] PIXIT Ref.: ETS 300 394-4-2 [23] , Annex B Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
DMO_MSMS_DMCC/	DMCC_supported	Check the dynamic requirements of the DMCC layer
DMO_MSMS_DMCC/CM/	Circuit_Mode	To test the CM behaviour of the DMCC entity of the IUT
DMO_MSMS_DMCC/CM/CA/	Initiate_Call	To test the basic CM capabilities of the DMCC entity of the IUT
DMO_MSMS_DMCC/CM/BV/	Circuit_Mode	To test the valid behaviour of the CM entity of the IUT
DMO_MSMS_DMCC/CM/BV/ID/	Initiate_Call_WithPresence	To test the protocol behaviour of the CM entity of the IUT, when the IUT is in idle state, and the DMO channel is free
DMO_MSMS_DMCC/CM/BV/TXO/	Initiate_Call	To test the protocol behaviour of the CM entity of the IUT, when the IUT is in TX occupation state
DMO_MSMS_DMCC/CM/BV/RO/	Initiate_Call_Preemption	To test the protocol behaviour of the CM entity of the IUT, when the IUT is in RX occupation state
DMO_MSMS_DMCC/CM/BV/TR/	Initiate_Call	To test the protocol behaviour of the CM entity of the IUT, when the IUT is in TX reservation state
DMO_MSMS_DMCC/CM/BV/RR/	Circuit_Mode_Changeover	To test the protocol behaviour of the CM entity of the IUT, when the IUT is in RX reservation state
DMO_MSMS_DMCC/CM/TI/	Initiate_Call	To test the protocol behaviour related to timers and constants of the CM entity of the IUT
DMO_MSMS_DMCC/SDS/	Short_Data_Service	To test the SDS behaviour of the DMCC entity of the IUT
DMO_MSMS_DMCC/SDS/CA/	Send_U_SDS	To test the basic SDS capabilities of the DMCC entity of the IUT
DMO_MSMS_DMCC/SDS/BV/	Short_Data_Service	To test the valid protocol behaviour of the SDS entity of the IUT
DMO_MSMS_DMCC/SDS/BV/ID/	Short_Data_Service	To test the valid protocol behaviour of the SDS entity of the IUT, when the IUT is in idle state, and the DMO channel is free
DMO_MSMS_DMCC/SDS/TI/	Send_A_SDS	To test the protocol behaviour related to timers and constants of the SDS entity of the IUT

5.5.3.2 Test case index for layer 3

Table 40: Test case index for layer 3

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
DMO_MSMS_DMCC/CM/CA/	DMO_MSMS_DMCC_CM_CA_01	Initiate_Group_Call	Setup and terminate a group call without presence check
DMO_MSMS_DMCC/CM/CA/	DMO_MSMS_DMCC_CM_CA_02	Initiate_Call_WithPresence	Setup and terminate an individual call with presence check
DMO_MSMS_DMCC/CM/CA/	DMO_MSMS_DMCC_CM_CA_03	Initiate_Call_WithoutPresence	Establish and terminate an individual call, when operating without presence check
DMO_MSMS_DMCC/CM/BV/ID/	DMO_MSMS_DMCC_CM_BV_ID_04	Initiate_Call_WithPresence	Release a call setup attempt when receiving a disconnect
DMO_MSMS_DMCC/CM/BV/TXO/	DMO_MSMS_DMCC_CM_BV_TXO_01	Initiate_Call_IRO	Initiate the release of a call during occupation
DMO_MSMS_DMCC/CM/BV/TXO/	DMO_MSMS_DMCC_CM_BV_TXO_02	Initiate_Call_ITO	Initiated end of transmission during occupation
DMO_MSMS_DMCC/CM/BV/TXO/	DMO_MSMS_DMCC_CM_BV_TXO_03	Initiate_Call	Receive pre-emption for an ongoing individual call
DMO_MSMS_DMCC/CM/BV/TXO/	DMO_MSMS_DMCC_CM_BV_TXO_04	Initiate_Call	Receive pre-emption for a new individual call
DMO_MSMS_DMCC/CM/BV/RO/	DMO_MSMS_DMCC_CM_BV_RO_02	Initiate_Call_Preemption	Initiate pre-emption to establish a call (either ongoing or new call)
DMO_MSMS_DMCC/CM/BV/RO/	DMO_MSMS_DMCC_CM_BV_RO_03	Initiate_Call_Preemption	Handle the reject of a pre-emption
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_01	Initiate_Call_IRR	Initiate release of a call during reservation
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_02	Initiate_Call	Receive and accept pre-emption for a new call during reservation
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_03	Initiate_Call	Receive and accept pre-emption for continuation of ongoing call during reservation
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_04	Initiate_Call	Receive and accept changeover during reservation
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_07	Initiate_Call	Receive and reject pre-emption for a new call during reservation
DMO_MSMS_DMCC/CM/BV/TR/	DMO_MSMS_DMCC_CM_BV_TR_08	Initiate_Call	Receive and reject changeover during reservation
DMO_MSMS_DMCC/CM/BV/RR/	DMO_MSMS_DMCC_CM_BV_RR_03	Circuit_Mode_Changeover	Initiate changeover to establish ongoing CM call
DMO_MSMS_DMCC/CM/BV/RR/	DMO_MSMS_DMCC_CM_BV_RR_04	Circuit_Mode_Changeover	Handle the reject of a changeover request
DMO_MSMS_DMCC/CM/TI/	DMO_MSMS_DMCC_CM_TI_01	Initiate_Call_WithPresence	Time out DT303 for response to DM SET UP PRES.
DMO_MSMS_DMCC/CM/TI/	DMO_MSMS_DMCC_CM_TI_02	Initiate_Call	Initiate end of transmission after time out of DT311 call transaction timer
DMO_MSMS_DMCC/SDS/CA/	DMO_MSMS_DMCC_SDS_CA_01	Send_U_SDS	Establish a SDS with unacknowledged service
DMO_MSMS_DMCC/SDS/BV/ID/	DMO_MSMS_DMCC_SDS_BV_ID_01	Send_A_SDS	Establish an SDS with acknowledged service
DMO_MSMS_DMCC/SDS/BV/ID/	DMO_MSMS_DMCC_SDS_BV_ID_02	Send_A_SDS	Handle the reject of an SDS with acknowledged service
DMO_MSMS_DMCC/SDS/BV/ID/	DMO_MSMS_DMCC_SDS_BV_ID_03	Accept_A_SDS	Receive an incoming SDS with acknowledged service
DMO_MSMS_DMCC/SDS/BV/ID/	DMO_MSMS_DMCC_SDS_BV_ID_04	Accept_A_SDS	Receive an incoming SDS with acknowledged service and with FCS
DMO_MSMS_DMCC/SDS/BV/ID/	DMO_MSMS_DMCC_SDS_BV_ID_05	Send_A_SDS_FCS	Establish an SDS with acknowledged service using the FCS
DMO_MSMS_DMCC/SDS/TI/	DMO_MSMS_DMCC_SDS_TI_01	Send_A_SDS	Time out on DT316 timer and retry an SDS DATA with acknowledged service

5.5.3.3 Test case selection expression definitions for layer 3

Table 41: Test case selection expression definitions for layer 3

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
DMCC_supported	PIC_DMCC_SUPPORTED	IUT supports DMCC.
Circuit_Mode	PIC_CM	IUT supports circuit mode call.
Short_Data_Service	PIC_SDS	IUT supports short data service call.
Initiate_Group_Call	PIC_GROUP_CALL AND PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_Group	IUt supports the initiation of a group call.
Initiate_Call_WithPresence	PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_PRES	IUT supports initiation of a call with presence check.
Initiate_Call_WithoutPresence	PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP	IUT supports initiation of a call without presence check.
Initiate_Call_IRO	((PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_PRES) OR (PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP)) AND (PIC_CALL_RELEASE_OCCUPATION AND PIX_IMP_DM_RELEASE)	IUT supports initiation of a call with or without presence check and it is possible to cause the IUT to send the DM-RELEASE PDU.
Initiate_Call_ITO	((PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_PRES) OR (PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP)) AND (PIC_END_OF_TRANSMISSION AND PIX_IMP_DM_TX_CEASED)	IUT supports initiation of a call with or without presence check and it is possible to cause the IUT to send the DM-TX CEASED PDU.
Initiate_Call	(PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_PRES) OR (PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP)	IUT supports initiation of a call with or without presence check.
Initiate_Call_Preemption	PIC_INITIATE_CALL_PREEMPTION AND PIX_IMP_DM_PREEMPT	IUT supports the initiation of call pre-emption.
Initiate_Call_IRR	((PIC_CALL_SETUP_PRESENCE_CHECK AND PIX_IMP_DM_SETUP_PRES) OR (PIC_CALL_SETUP_NO_PRESENCE_CHECK AND PIX_IMP_DM_SETUP)) AND (PIC_CALL_RELEASE_RESERVATION AND PIX_IMP_DM_RELEASE)	IUT supports initiation of a call with or without presence check and it is possible to cause the IUT to send the DM-RELEASE PDU.
Circuit_Mode_Changeover	PIC_CALL_CHANGEOVER AND PIX_IMP_DM_TX_REQUEST	IUT supports call changeover and it is possible to cause the IUT to send the DM-TX REQUEST PDU.
Send_U_SDS	PIC_SEND_U_SDS AND PIX_IMP_DM_SDS_UDATA	IUT supports sending of unacknowledged data service on group or individual address.
Send_A_SDS	PIC_SEND_A_SDS AND PIX_IMP_DM_SDS_DATA	IUT supports sending of acknowledge data service with or without data in the acknowledgement
Send_A_SDS_FCS	PIC_SEND_SDS_FCS AND PIC_SEND_A_SDS AND PIX_IMP_DM_SDS_DATA	IUT supports sending of acknowledge data service with FCS and with or without data in the acknowledgement
Accept_A_SDS	PIC_RECEIPT_A_SDS	IUT supports receipt of acknowledge SDS with or without data in the acknowledgement

5.5.3.4 Test suite parameter definitions for layer 3

Table 42: Test suite parameter definitions for layer 3

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
PIC_DMCC_SUPPORTED	BOOLEAN	A.4.2.1, table A.63/1	DMCC supported.
PIC_CM	BOOLEAN	A.4.2.1, table A.64/1	IUT supports circuit mode call.
PIC_SDS	BOOLEAN	A.4.2.1, table A.64/2	IUT supports short data service call.
PIC_INDIVIDUAL_CALL	BOOLEAN	A.4.2.1, table A.66/1	IUT supports individual CM call.
PIC_GROUP_CALL	BOOLEAN	A.4.2.1, table A.66/2	IUT supports group CM call.
PIC_SEND_SDS_FCS	BOOLEAN	A.4.2.1, table A.67/8	IUT supports inclusion of FCS in transmission
PIC_SDS_DATA1	BOOLEAN	A.4.2.1, table A.69/1	True if the IUT supports the SDS User defined data 1 type
PIC_SDS_DATA2	BOOLEAN	A.4.2.1, table A.69/2	True if the IUT supports the SDS User defined data 2 type
PIC_SDS_DATA3	BOOLEAN	A.4.2.4, table A.80/1	IUT supports outgoing call setup without presence check.
PIC_SDS_DATA4	BOOLEAN	A.4.2.4, table A.80/3	IUT supports outgoing call setup with presence check.
PIC_CALL_SETUP_NO_PRESENCE_CHECK	BOOLEAN	A.4.2.4, table A.80/1	IUT supports outgoing call setup without presence check.
PIC_CALL_SETUP_PRESENCE_CHECK	BOOLEAN	A.4.2.4, table A.80/3	IUT supports outgoing call setup with presence check.
PIC_END_OF_TRANSMISSION	BOOLEAN	A.4.2.4, table A.80/7	IUT supports release of radio resource during occupation
PIC_CALL_RELEASE_OCCUPATION	BOOLEAN	A.4.2.4, table A.80/8	IUT supports release of call during occupation
PIC_INITIATE_CALL_PREEMPTION	BOOLEAN	A.4.2.4, table A.80/10	IUT supports call pre-emption
PIC_CALL_RELEASE_RESERVATION	BOOLEAN	A.4.2.4, table A.80/14	IUT supports release of call during reservation
PIC_CALL_CHANGEOVER	BOOLEAN	A.4.2.4, table A.80/15	IUT supports call changeover
PIC_SEND_U_SDS	BOOLEAN	A.4.2.4, table A.81/1	IUT supports sending of unacknowledged data service
PIC_SEND_A_SDS	BOOLEAN	A.4.2.4, table A.81/2	IUT supports sending of acknowledge data service
PIC_RECEIPT_A_SDS	BOOLEAN	A.4.2.4, table A.81/5	IUT supports receipt of acknowledge data service
PIC_DN303	INTEGER	A.4.2.4, table A.84/1	DN303 value [from 0 to 3]. Number of attempts to send DM-SETUP PRES if no response received.
PIC_DN314	INTEGER	A.4.2.4, table A.84/2	DN314 value (1 to 6). Number of transmissions of DM-SDS UDATA.
PIC_DN316	INTEGER	A.4.2.4, table A.84/3	DN316 value (1 to 4). Number of attempts to send DM-SDS DATA if no response received.
PIC_T_303	INTEGER	A.4.2.4, table A.85/1	Value in msec of the timer DT303
PIC_T_311	INTEGER	A.4.2.4, table A.85/2	Value in seconds of the timer DT311
PIC_T_316	INTEGER	A.4.2.4, table A.85/3	Value in ms of the timer DT316
PIX_IMP_DM_SETUP	BOOLEAN	B.3.3, table B.14/1	It is possible to cause the IUT to send a DM-SETUP PDU
PIX_IMP_DM_SETUP_Group	BOOLEAN	B.3.3, table B.14/2	It is possible to cause the IUT to send a DM-SETUP PDU for a group call
PIX_IMP_DM_SETUP_PRES	BOOLEAN	B.3.3, table B.14/3	It is possible to cause the IUT to send a DM-SETUP PRES PDU
PIX_IMP_DM_TX_REQUEST	BOOLEAN	B.3.3, table B.14/4	It is possible to cause the IUT to send a DM-TX REQUEST PDU.
PIX_IMP_DM_RELEASE	BOOLEAN	B.3.3, table B.14/5	It is possible to cause the IUT to send a DM-RELEASE PDU.
PIX_IMP_DM_TX_CEASED	BOOLEAN	B.3.3, table B.14/6	It is possible to cause the IUT to send a DM-TX CEASED PDU.
PIX_IMP_DM_SDS_DATA	BOOLEAN	B.3.3, table B.14/7	It is possible to cause the IUT to send a DM-SDS DATA PDU.
PIX_IMP_DM_SDS_UDATA	BOOLEAN	B.3.3, table B.14/8	It is possible to cause the IUT to send

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
			a DM-SDS UDATA PDU.
PIX_CIRCUIT_MODE_TYPE	Circuit_Mode_Type_Type	B.3.3, table B.15/1	Traffic channel type and interleaving depth supported by the IUT.
PIX_OTHER_TSI	TSI_Type	B.3.3, table B.15/2	The TSI not recognized by the IUT and the tester.
PIX_POWER_CLASS	Power_Class_Type	B.3.3, table B.15/3	The power class of the IUT.
PIX_POWER_CONTROL_FLAG	Power_Control_Flag_Type	B.3.3, table B.15/4	Power control flag, which indicate whether or not power control by slave is permitted.
PIX_RESERVATION_TIME	Reservation_Time_Remaining_Type	B.3.3, table B.15/5	Value of the reservation time remaining used by the master MS.
PIX_SDS_TIME_REMAINING	SDS_Time_Remaining_Type	B.3.3, table B.15/6	Value of the SDS time remaining element used to indicate the current estimate of the SDS channel occupation time.
PIX_SDS_DATA_1	User_Defined_Data_1_Type	B.3.3, table B.15/7	Value of SDS data type 1.
PIX_SDS_DATA_1_FCS	FCS_Type	B.3.3, table B.15/8	Value of the Frame Check Sequence for the SDS DATA 1 data.
PIX_SDS_DATA_2	User_Defined_Data_2_Type	B.3.3, table B.15/9	Value of SDS data type 2.
PIX_SDS_DATA_2_FCS	FCS_Type	B.3.3, table B.15/10	Value of the Frame Check Sequence for the SDS DATA 2 data.
PIX_SDS_DATA_3	User_Defined_Data_3_Type	B.3.3, table B.15/11	Value of SDS data type 3.
PIX_SDS_DATA_3_FCS	FCS_Type	B.3.3, table B.15/12	Value of the Frame Check Sequence for the SDS DATA 3 data.
PIX_SDS_DATA_4	User_Defined_Data_4_Type	B.3.3, table B.15/13	Value of SDS data type 4.
PIX_SDS_DATA_4_FCS	FCS_Type	B.3.3, table B.15/14	Value of the Frame Check Sequence for the SDS DATA 4 data.
PIX_SDS_DATA_4_LENGTH	Length_Indicator_Type	B.3.3, table B.15/15	Length of the value of the SDS data type 4.
PIX_SDS_CURRENTLY_TESTING	INTEGER	B.3.3, table B.15/16	The type (1 to 4) of SDS data currently testing.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

5.5.4 Security test specification

5.5.4.1 Test suite structure for Ud security

Table 43: Test suite structure for Ud security

Test Suite Structure		
Suite Name: Security Standards Ref.: ETS 300 396-6 [19] PICS Ref.: ETS 300 394-5-1 [12] PIXIT Ref.: ETS 300 394-5-3 [14], Annex D Test Method(s): The embedded variant of the remote single party test method Comments:		
Test Group Reference	**Selection Ref.**	**Test Group Objective**
Sec_DM/	DML3_Security_Supp	To test the behaviour of the Direct Mode security module of the IUT.
Sec_DM/L3/	DML3_Security_Supp	To test the DM security module at layer 3.
Sec_DM/L3/OTAR/	DML3_OTAR_Supp	To test the DM security module of the IUT, when operating the OTAR procedures.
Sec_DM/L3/OTAR/BV/	DML3_OTAR_Supp	To test the valid behaviour of OTAR scenarios of the DM security protocols.
Sec_DM/L3/SED/	DML3_SED_Supp	To test the DM security module of the IUT, when operating the enable and disable procedures.
Sec_DM/L3/SED/BV/	DML3_SED_Supp	To test the DM security module of the IUT, when operating the valid behaviour of the enable and disable procedures.
Sec_DM/L3/SED/BV/PD/	DML3_SED_Supp	To test the DM security module of the IUT, when operating the permanent disabling procedures.
Sec_DM/L3/SED/BV/PD/TAR/	DML3_Target_Supp	To test the DM security module of the IUT, when operating the permanent disabling procedures and when IUT acts as a target.
Sec_DM/L3/SED/BV/EN/	DML3_Target_Supp	To test the DM security module of the IUT, when operating the enabling procedures.
Sec_DM/L3/SED/BV/EN/TAR/	DML3_Target_Supp	To test the DM security module of the IUT, when operating the enabling procedures and when IUT acts as a target.
Sec_DM/L3/SED/BV/TEI/	DML3_Target_Supp	To test the DM security module of the IUT, when operating the TEI exchange procedure.

5.5.4.2 Test case index for Ud security

Table 44: Test case index for Ud security

Test Case Index			
Test Group Reference	**Test Case Id**	**Selection Ref.**	**Description**
Sec_DM/L3/OTAR/BV/	Sec_DM_L3_OTAR_BV_01	DML3_KU_IMP_Supp	IUT requests SCK.
Sec_DM/L3/OTAR/BV/	Sec_DM_L3_OTAR_BV_02	DML3_KS_KH_Supp	Testset request key from IUT acting as a key sealer or as key holder (as a relay for key sealer).
Sec_DM/L3/OTAR/BV/	Sec_DM_L3_OTAR_BV_03	DML3_KH_IMP_Supp	IUT acts as a key holder, testset as a key sealer.
Sec_DM/L3/OTAR/BV/	Sec_DM_L3_OTAR_BV_04	DML3_KU_Supp	Testset initiates the provision of SCK.
Sec_DM/L3/SED/BV/PD/TAR/	Sec_DM_L3_SED_BV_PD_TAR_02	DML3_Target_Supp	Permanently disable equipment (IUT acts as a target).
Sec_DM/L3/SED/BV/EN/TAR/	Sec_DM_L3_SED_BV_EN_TAR_01	DML3_Target_Supp	Enable equipment (IUT acts as a target).
Sec_DM/L3/SED/BV/EN/TAR/	Sec_DM_L3_SED_BV_EN_TAR_02	DML3_Target_Supp	Enable subscriber (IUT acts as a target).
Sec_DM/L3/SED/BV/TEI/	Sec_DM_L3_SED_BV_TEI_01	DML3_Target_Supp	TEI delivery (IUT acts as a target)

5.5.4.3 Test case selection expression definitions for Ud security

Table 45: Test case selection expression definitions for Ud security

Test Case Selection Expression Definitions		
Expression Name	**Selection Expression**	**Comments**
DML3_Security_Supp	PIC_DM_SEC_SUPP AND PIX_DM	IUT supports DM security.
DML3_OTAR_Supp	PIC_DM_OTAR_SUPP AND PIX_DM	IUT supports OTAR.
DML3_SED_Supp	PIC_DM_SED_SUPP AND PIX_DM	Enable/Disable procedures supported.
DML3_KS_KH_Supp	PIC_DM_KS_KH_SUPP AND PIX_DM	Key sealer or key holder role supported.
DML3_KH_IMP_Supp	PIC_DM_KH_SUPP AND PIX_IMP_SDS_DATA_SCK_Demand AND PIX_DM	Key holder role supported and the sending of the SDS DATA PDU containing the OTAR SCK demand implemented.
DML3_KU_IMP_Supp	PIC_DM_KU_SUPP AND PIX_IMP_SDS_DATA_SCK_Demand AND PIX_DM	Key user role supported and the sending of the SDS DATA PDU containing the OTAR SCK demand implemented.
DML3_KU_Supp	PIC_DM_KU_SUPP AND PIX_DM	Key user role supported.
DML3_Target_Supp	PIC_DM_TARGET_SUPP AND PIX_DM	Target role supported.

5.5.4.4 Test suite parameter definitions for Ud security

Table 46: Test suite parameter definitions for Ud security

Test Suite Parameter Declarations			
Parameter Name	**Type**	**PICS/PIXIT Ref.**	**Comments**
PIC_DM_SEC_SUPP	BOOLEAN	A.4.2.1, table A.63/5	DM security supported.
PIC_DM_OTAR_SUPP	BOOLEAN	A.4.2.5, table A.86/2	OTAR supported.
PIC_DM_SED_SUPP	BOOLEAN	A.4.2.5, table A.86/3	Secure enable/disable supported.
PIC_DM_KS_SUPP	BOOLEAN	A.4.2.5.2, table A.88/1	Key sealer role supported.
PIC_DM_KU_SUPP	BOOLEAN	A.4.2.5.2, table A.88/2	Key user role supported.
PIC_DM_KH_SUPP	BOOLEAN	A.4.2.5.2, table A.88/3	Key holder role supported.
PIC_DM_TARGET_SUPP	BOOLEAN	A.4.2.5.3, table A.91/2	Target role in Enable/Disable procedures supported.
PIX_IMP_SDS_DATA_SCK_Demand	BOOLEAN	B.3.4, table B.16/1	Sending of the DM SDS DATA PDU containing an OTAR SCK demand implemented.
PIX_DM	BOOLEAN	B.3.4, table B.17/1	Testing the Direct Mode Security protocol
PIX_MS_ITSI	TSI_Type	B.3.4, table B.18/1	ITSI of the IUT.
PIX_TEI	TEI_Type	B.3.4, table B.18/2	TEI.
PIX_DM_SDS_TIME_REMAINING	DM_TimeRemainingType	B.3.4, table B.18/3	Value of the SDS time remaining element used to indicate the current estimate of the SDS channel occupation time.
PIX_RAND1	RandomChallengeType	B.3.4, table B.19/3	Value of Random challenge (RAND1).
PIX_RS	RandomSeedType	B.3.4, table B.19/2	Value of the Random seed (RS).
PIX_RES2	ResponseValueType	B.3.4, table B.19/3	Value of the result RES2.
PIX_SCKN	SCK_NbrType	B.3.4, table B.20/1	SCK number.
PIX_SCK_VN	SCK_VersionNbrType	B.3.4, table B.20/2	SCK version number.
PIX_SSCK	SealedKeyType	B.3.4, table B.20/3	Sealed SCK.
Detailed Comments The references given in the PICS/PIXIT Ref. -column refer to the requirement tables in annex A and declarations in annex B in the present document.			

Annex A (normative): Requirements Tables (RT)

A.1 Introduction

The RT indicates the status of the features tested according to the requirements in the present document, i.e. which features and procedures are mandatory, optional or conditional.

The test case selection in clause 5 is based on the values declared by the manufacturer in the "Support" column in this RT.

The following table headers are applicable to this RT:

Item	is an entry number in the table to be used for references. Multiple numbering levels may be used to express major functions, and their supporting components;
Reference	references to specifications where the requirements and tests are declared;
Status	contains the status required for implementation conforming to the present document;
Support	is the column for the manufacturer's statement of whether the particular item is supported by the implementation;
Allowed values	specifies the allowed (range of) values for a parameter (only used when a declaration of supported values is required for the purposes of testing);
Supported values	is the column for the manufacturer's statement of the implemented (range of) values for a parameter (only to be filled in when allowed values are specified);
Transmission	specifies whether the support of sending a message, frame or information element is required;
Reception	specifies whether the support of receiving a message, frame or information element is required;

The interpretation of status columns in all tables is as follows:

m mandatory - the capability is required to be supported.

o optional - the capability may be supported or not.

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", "n" 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.

n Not a requirement. The entry is outside the scope of the present document and it is not a requirement that the feature is supported.

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.

If a procedure, message, frame, information element, timer, or constant is not explicitly listed in any of the following tables these shall be considered as "n".

A.2 Type of air interface

The supplier of the implementation shall state the support of the implementation for each type of air interface presented in table A.1.

Table A.1: Type of air interface

Item	Type of air interface	Reference	Status	Support
1	Voice plus Data (V+D), Um	ETS 300 392	o.1	
2	Direct Mode Operation (DMO), Ud	ETS 300 396	o.1	

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

A.3 Requirements tables for Um air interface

The requirements in this clause apply to TETRA systems implementing the Um interface.

A.3.1 General

The supplier of the implementation shall state the support of the implementation for each of the general capabilities, features, modes of operation and general protocol capabilities presented in tables A.2 to A.4.

Table A.2: General capabilities and features

Prerequisite: A.1/1 -- Um				
Item	**Capability or feature name**	**Reference**	**Status**	**Support**
1	Base Station (BS)	ETS 300 392-2 [1]	o.2	
2	Mobile Station (MS)	ETS 300 392-2 [1]	o.2	
3	Protected circuit mode data	ETS 300 392-2 [1]	o	

o.2 It is mandatory to support one of these items.

Table A.3: Modes of operation

Prerequisite: A.1/1 -- Um				
Item	**Capability or feature name**	**Reference (note)**	**Status**	**Support**
1	Downlink Continuous Transmission (D-CT)	4.11.1.1	c301	
2	Downlink Carrier Timesharing Transmission (D-CTT)	4.11.1.2, 19.3.5.1, 23.3.2.1, 23.3.2.3	c302	
3	Downlink Main Control Channel Timesharing Transmission (D-MCCTT)	4.11.1.3, 19.3.5.2, 23.3.2.2	c302	
4	Multiple Slot Transmission (U-MST)	4.11.1.4, 23.3.1.4	o	
5	Normal Control Mode (NCM)	4.11.2.1, 19.3.1	m	
6	Minimum Control Mode (MCM)	4.11.2.2, 19.3.3, 23.3.3	o	
NOTE: The capabilities or features are specified in ETS 300 392-2 [1] under the given subclause(s).				

o.3 It is mandatory to support at least one of these items.

c301: IF A.2/1 -- BS
THEN o.3
ELSE m

c302: IF A.2/1 -- BS
THEN o.3
ELSE o

Table A.4: General protocol capabilities

Prerequisite: A.2/2 -- MS				
Item	**Capability name**	**Reference (note)**	**Status**	**Support**
1	Circuit Mode Control Entity (CMCE)	11, 12, 13, 14	o	
2	Mobility Management (MM)	15, 16	m	
3	Mobile Link Entity (MLE)	17, 18	m	
4	Logical Link Control (LLC)	21, 22	m	
5	Upper Medium Access Control (Upper MAC)	21, 23	m	
6	Lower Medium Access Control (Lower MAC)	8	m	
7	Security	ETS 300 392-7 [2]	m	
NOTE: The capabilities are specified in ETS 300 392-2 [1] under the given clause(s), unless otherwise stated.				

A.3.2 Physical layer

The supplier of the implementation shall state the support of the implementation for each of the physical layer capabilities, features, requirements and parameters presented in tables A.5 to A.9.

Table A.5: Physical layer capabilities and features

Prerequisite: A.1/1 -- Um				
Item	**Capability or feature name**	**Reference (note)**	**Status**	**Support**
1	BS equipment implementing more than one power class	6.4.1.2	c501	
2	BS equipment with only one transmitter	6.4.6.2	c501	
3	BS equipment not intended to be collocated with other radio equipment operating in the same frequency band	6.4.6.2	c501	
4	Class A equipment	6.6.2	o.4	
5	Class B equipment	6.6.2	o.4	
6	Class E equipment	6.6.2	c502	
NOTE: The capabilities or features are specified in ETS 300 392-2 [1] under the given subclause.				

o.4 It is mandatory to support one of these items.

c501: IF A.2/1 -- BS
THEN o
ELSE n/a

c502: IF A.2/2 -- MS
THEN o.4
ELSE n/a

Table A.6: Physical layer requirements

Prerequisite: A.1/1 -- Um				
Item	**Requirement**	**Reference (note)**	**Status**	**Support**
1	Modulation	5.2	m	
2	Frequency bands and channel allocation	6.2	m	
3	MS power control level	6.4.1.2	c602	
4	Unwanted conducted emission over the useful part of the burst	6.4.2.2.1	m	
5	Unwanted conducted emission during the switching transients	6.4.2.2.2	c603	
6	Unwanted conducted emission far from the carrier	6.4.2.3	m	
7	Unwanted conducted emission during CLCH and BLCH	6.4.2.4	m	
8	Unwanted conducted emission in the non-transmit state	6.4.2.5	c604	
9	Unwanted radiated emissions	6.4.3	m	
10	BS output power time mask	6.4.5	c605	
11	MS output power time mask	6.4.5	c602	
12	BS output power in non-active transmit state	6.4.5.1	c605	
13	MS output power in non-active transmit state	6.4.5.2	c602	
14	BS transmitter intermodulation attenuation	6.4.6.2	c601	
15	MS transmitter intermodulation attenuation	6.4.6.3	c602	
16	Intra-BS transmitter intermodulation attenuation	6.4.7	c606	
17	Blocking characteristics	6.5.1.2	m	
18	Spurious response rejection	6.5.2.2	m	
19	Intermodulation response rejection	6.5.3.2	m	
20	Unwanted conducted emission in reception	6.5.4.2	c604	
21	Unwanted radiated emission	6.5.5	c604	
22	Modulation accuracy	6.6.1.2	m	
23	Nominal error rate	6.6.2.1	m	
24	Dynamic reference sensitivity performance	6.6.2.2	m	
25	BS dynamic reference sensitivity performance	6.6.2.2.1	c601	
26	MS dynamic reference sensitivity performance	6.6.2.2.2	c602	
27	Reference interference performance	6.6.2.3	m	
28	BS reference interference performance	6.6.2.3.1	c601	
29	MS reference interference performance	6.6.2.3.2	c602	
30	Static reference sensitivity performance	6.6.2.4	m	
31	BS static reference sensitivity performance	6.6.2.4.1	c601	
32	MS static reference sensitivity performance	6.6.2.4.2	c602	
33	MS receiver performance for synchronization burst acquisition	6.6.2.5	c602	
34	Timing of transmitted signal	7.4	c602	
35	BS requirement for synchronization	7.5	c601	
36	MS requirement for synchronization	7.6	c602	
37	Mapping of BCCH and CLCH	9.5.2	c602	
38	Mapping of SCH	9.5.3	c602	
39	Mapping of TCH and STCH	9.5.4	c602	
40	Mapping of AACH	9.5.5	c602	
41	Handling of monitoring pattern	9.6	n	n/a
42	RF power control	10.2	c607	
43	Received signal strength	10.3.1	c602	
44	MS open loop power control	23.4.4.2	c602	
45	MS closed loop power control	23.4.4.3	n	n/a
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

c601: IF A.2/1 -- BS
THEN m
ELSE n/a

c602: IF A.2/2 -- MS
THEN m
ELSE n/a

c603: IF (A.2/1 AND (A.3/2 OR A.3/3)) OR A.2/2
THEN m -- BS operating discontinuous mode or MS
ELSE n/a

c604: IF (A.2/1 AND NOT A.3/1) OR A.2/2
THEN m -- BS not operating continuos mode or MS
ELSE n/a

c605: IF A.2/1 AND (A.3/2 OR A.3/3)
THEN m -- BS operating discontinuous mode
ELSE n/a

c606 IF A.2/1 AND NOT A.5/2
THEN m -- BS with more than one transmitter
ELSE n/a

c607: IF A.2/2 -- MS
THEN m
ELSE x

Table A.7: Output power and power class requirements and parameters

Prerequisite: A.1/1 -- Um						
Item	**Requirement and parameter**	**Reference (note)**	**Status**	**Support**	**Allowed values**	**Supported values**
1	BS output power and power class	6.4.1.1	c701		[1]	
2	MS output power and power class	6.4.1.2	c702		[1]	
NOTE: The parameters are specified in ETS 300 392-2 [1] under the given subclause.						

c701: IF A.2/1 -- BS
THEN m
ELSE n/a

c702: IF A.2/2 -- MS
THEN m
ELSE n/a

Table A.8: RF carrier frequency bands

Prerequisite: A.1/1 -- Um						
Item	**Requirement and parameter**	**Reference (note)**	**Status**	**Support**	**Minimum range (MHz)**	**Supported range**
1	Uplink RF carrier frequencies	4.2.1	m		380 to 385	
2	Downlink RF carrier frequencies	4.2.1	m		390 to 395	
NOTE: The parameters are specified in the present document under the given subclause.						

Table A.9: Extreme ambient temperature requirements

Prerequisite: A.1/1 -- Um				
Item	**Requirement**	**Reference (note)**	**Status**	**Support**
1	Extreme temperatures	6.2.2	c901	
NOTE: The requirements are specified in ETS 300 394-1 [7] under the given subclause.				

c901: IF A. 2/2 -- MS
THEN m
ELSE n

A.3.3 Layer 2

A.3.3.1 Lower MAC layer

The supplier of the implementation shall state the support of the implementation for each of the error control schemes presented in table A.10.

Table A.10: Error control schemes of Lower MAC

Prerequisite: A.4/6 -- Lower MAC				
Item	**Error control scheme**	**Reference (note)**	**Status**	**Support**
1	Error control scheme for Access Assignment CHannel (AACH)	8.3.1	m	
2	Error control scheme for Broadcast Synchronization CHannel (BSCH)	8.3.2	m	
3	Error control scheme for mapping onto H-bursts on the Downlink (SCH/HD), Broadcast Network CHannel (BNCH) and STealing Channel (STCH)	8.3.4.1	m	
4	Error control scheme for Signalling CHannel for mapping onto Half-bursts on the Uplink (SCH/HU)	8.3.4.2	m	
5	Error control scheme for Signalling CHannel for mapping onto Full-bursts (SCH/F)	8.3.4.3	m	
NOTE: The error control schemes are specified in ETS 300 392-2 [1] under the given subclause.				

A.3.3.2 Upper MAC layer

The supplier of the implementation shall state the support of the implementation for each of the Upper MAC features, procedures, requirements, and PDUs presented in tables A.11 to A.20.

Table A.11: Upper MAC features

Prerequisite: A.4/5 -- Upper MAC				
Item	**Upper MAC feature**	**Reference (note)**	**Status**	**Support**
1	Control channel usage procedures	23.3	m	
2	Minimum mode operation	23.3.3	o	
3	General MAC procedures	23.4	m	
4	PDU transfer for signalling messages procedures	23.5	m	
5	PDU transfer for broadcast messages procedures	23.6	m	
6	Layer management communication procedures	23.7	m	
7	PDU transfer for traffic procedures	23.8	c1101	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

c1101: IF A.28/1 -- CC supported
THEN m
ELSE n/a

Table A.12: Upper MAC control channel usage procedures

Prerequisite: A.11/1 -- Control channel usage procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Receiving and decoding of messages on the downlink MCCH	23.3.1.1	m	
2	Receiving messages on the SCCH	23.3.1.2	n	n/a
3	Receiving messages on the ACCH	23.3.1.3	c1201	
4	Discontinuous transmission procedures	23.3.2	n	n/a
5	Beginning of minimum mode	23.3.3.1	m	
6	MS operation during frames 1-17 in minimum mode	23.3.3.2	c1202	
7	MS operation during frame 18 in minimum mode	23.3.3.3	c1202	
8	End of minimum mode	23.3.3.5	c1202	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

c1201: IF A.28/1 -- CC supported
THEN m
ELSE n/a

c1202: IF A.11/2 -- Minimum mode supported
THEN m
ELSE n/a

Table A.13: General MAC procedures

Prerequisite: A.11/3 -- General MAC procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Recognition of destination address in downlink messages	23.4.1.2.1	m	
2	Source address in uplink messages	23.4.1.2.2	m	
3	Handle event label recognition procedures	23.4.1.2.3	n	n/a
4	Expiry of event label timer	23.4.1.2.3	n	n/a
5	Handle event label transmission procedures	23.4.1.2.3	n	n/a
6	Usage of SMI procedures	23.4.1.2.4	n	n/a
7	Usage of USSI procedures	23.4.1.2.5	n	n/a
8	Transmission of TM-SDU not requiring fragmentation	23.4.2.1.2	m	
9	Fragmentation of uplink TM-SDU, when a transmission starts in a full slot granted by the BS	23.4.2.1.2	m	
10	Fragmentation of uplink TM-SDU, using random access to start the process	23.4.2.1.2	m	
11	Fill bit addition	23.4.2.2	m	
12	Reception of unfragmented TM-SDU	23.4.3.1.1	m	
13	Reception of fragmented TM-SDU	23.4.3.1.1	m	
14	Fill bit deletion	23.4.3.2	m	
15	PDU dissociation	23.4.3.3	m	
16	PDU error detection procedure	23.4.3.4	n	n/a
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.14: Upper MAC PDU transfer for signalling messages procedures

Prerequisite: A.11/4 -- PDU transfer for signalling messages procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Reception of ACCESS-DEFINE PDU	23.5.1.4.1	n	n/a
2	Reception of ACCESS-ASSIGN PDU	23.5.1.4.2	m	
3	Initiating a random access	23.5.1.4.3	m	
4	Checking for appropriate access code	23.5.1.4.4	m	
5	First try procedure	23.5.1.4.5	m	
6	Re-try procedure	23.5.1.4.8	m	
7	Abandoning random access attempt	23.5.1.4.9	m	
8	Reservation requirement	23.5.2.1	m	
9	Slot granting	23.5.2.2	m	
10	Replace current channel with specified channel	23.5.4.2	m	
11	Additional channel allocation procedure	23.5.4.2	n	n/a
12	Quit current channel and go to specified channel	23.5.4.2	m	
13	Replace current channel with specified channel, plus MCCH/SCCH or CSS	23.5.4.2	m	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.15: Upper MAC PDU transfer for broadcast messages procedures

Prerequisite: A.11/5 -- PDU transfer for broadcast messages procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Reception and decoding of BNCH and BSCH	23.6.1	m	
2	Acquiring cell synchronization	23.6.2	m	
3	Acquiring network information	23.6.3	m	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.16: Upper MAC layer management communication procedures

Prerequisite: A.11/6 -- Layer management communication procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Path loss parameter C1 calculation	23.7.1.1	m	
2	Path loss parameter C2 calculation	23.7.1.2	m	
3	Downlink measurements	23.7.3.1	m	
4	Monitoring measurements	23.7.4.2	m	
5	Signal strength measurements	23.7.4.3	m	
6	Scanning measurements	23.7.5.2	m	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.17: Upper MAC PDU transfer for traffic procedures

Prerequisite: A.11/7 -- PDU transfer for traffic procedures				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Timing of change of mode	23.8.2.2	m	
2	Transmission of uplink stealing	23.8.4.1.1	m	
3	Reception of downlink stealing	23.8.4.2.2	m	
NOTE: The requirements are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.18: MAC PDUs for uplink and downlink

Prerequisite: A.4/5 -- Upper MAC							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note)	**Status**	**Support**	**Reference (note)**	**Status**	**Support**
1	MAC-ACCESS	-	n/a	n/a	21.4.2.1	m	
2	MAC-END-HU	-	n/a	n/a	21.4.2.2	m	
3	MAC-DATA	-	n/a	n/a	21.4.2.3	m	
4	MAC-FRAG	21.4.3.2	m		21.4.2.4	m	
5	MAC-END	21.4.3.3	m		21.4.2.5	m	
6	MAC-RESOURCE	21.4.3.1	m		-	n/a	n/a
NOTE: The PDUs are specified in ETS 300 392-2 [1] under the given subclause.							

Table A.19: MAC PDUs for broadcast

Prerequisite: A.4/5 -- Upper MAC							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note)	**Status**	**Support**	**Reference (note)**	**Status**	**Support**
1	SYSINFO	21.4.4.1	m		-	n/a	n/a
2	SYNC	21.4.4.2	m		-	n/a	n/a
3	ACCESS-DEFINE	21.4.4.3	n	n/a	-	n/a	n/a
4	ACCESS-ASSIGN	21.4.7	m		-	n/a	n/a
NOTE: The PDUs are specified in ETS 300 392-2 [1] under the given subclause.							

Table A.20: MAC PDUs for the U-plane

Prerequisite: A.4/5 -- Upper MAC							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note)	**Status**	**Support**	**Reference (note)**	**Status**	**Support**
1	MAC-U-SIGNAL	21.4.5	n	n/a	21.4.5	n	n/a
2	MAC-TRAFFIC	21.4.6	c2001		21.4.6	c2001	
NOTE: The PDUs are specified in ETS 300 392-2 [1] under the given subclause.							

c2001: IF A.28/1 -- CC supported
THEN m
ELSE n/a

A.3.3.3 LLC layer

The supplier of the implementation shall state the support of the implementation for each of the LLC features, procedures, PDUs, constants and timers presented in tables A.21 to A.27.

Table A.21: LLC features

Prerequisite: A.4/4 -- LLC				
Item	**LLC feature**	**Reference (note)**	**Status**	**Support**
1	Basic link acknowledged service	22.2.1, 22.3.2	m	
2	Basic link unacknowledged service	22.2.1, 22.3.2	m	
3	Advanced link acknowledged service	22.2.2, 22.3.3	n	n/a
4	Advanced link unacknowledged service	22.2.2, 22.3.4	n	n/a
NOTE: The features are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.22: LLC basic link procedures for acknowledged service

Prerequisite: A.21/1 -- Acknowledged basic link				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Data reception	22.3.2.3	m	
2	Data transmission	22.3.2.1, 22.3.2.3	m	
3	FCS checking in reception	22.3.1.5, 22.3.2.3	o	
4	FCS calculation in transmission	22.3.1.5, 22.3.2.3	o	
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.23: LLC basic link procedures for unacknowledged service

Prerequisite: A.21/2 -- Unacknowledged basic link				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Data reception	22.3.2.4.2	m	
2	Data transmission	22.3.2.4.1	n	n/a
3	FCS checking in reception	22.3.1.5, 22.3.2.4.2	o	
4	FCS calculation in transmission	22.3.1.5, 22.3.2.4.1	n	n/a
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.24: LLC basic link PDUs for acknowledged service

Prerequisite: A.21/1 -- Acknowledged basic link							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note 1)	**Status**	**Support**	**Reference (note 1)**	**Status**	**Support**
1	BL-ACK without FCS	21.2.2.1	m		21.2.2.1	m	
2	BL-ADATA without FCS	21.2.2.2	m		21.2.2.2	m	
3	BL-DATA without FCS	21.2.2.3	m		21.2.2.3	m	
4	BL-ACK with FCS	21.2.2.1	m (note 2)		21.2.2.1	c2401	
5	BL-ADATA with FCS	21.2.2.2	m (note 2)		21.2.2.2	c2401	
6	BL-DATA with FCS	21.2.2.3	m (note 2)		21.2.2.3	c2401	
NOTE 1: The PDUs are specified in ETS 300 392-2 [1] under the given subclause. NOTE 2: It is not mandatory for an implementation to check the FCS of a received PDU, but it shall be capable of receiving and decoding PDUs containing an FCS field.							

c2401: IF A.22/4 -- FCS calculation in transmission in acknowledged basic link
THEN m
ELSE n/a

Table A.25: LLC basic link PDUs for unacknowledged service

Prerequisite: A.21/2 -- Unacknowledged basic link							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note 1)	**Status**	**Support**	**Reference (note 1)**	**Status**	**Support**
1	BL-UDATA without FCS	21.2.2.4	m		21.2.2.4	n	n/a
2	BL-UDATA with FCS	21.2.2.4	m (note 2)		21.2.2.4	n	n/a
NOTE 1: The PDUs are specified in ETS 300 392-2 [1] under the given subclause. NOTE 2: It is not mandatory for an implementation to check the FCS of a received PDU, but it shall be capable of receiving and decoding PDUs containing an FCS field.							

Table A.26: LLC constants for basic link

Prerequisite: A.21/1 -- Acknowledged basic link						
Item	**Constant**	**Reference (note 1)**	**Status**	**Support**	**Values**	
					Allowed	**Supported**
1	N.252	A.2	m		1 .. 5, 3 .. 5 (note 2)	
NOTE 1: The constant is specified in ETS 300 392-2 [1] under the given subclause. NOTE 2: The first range applies, when stealing repeats are used for the PDU being transmitted. The second range applies when not.						

Table A.27: LLC basic link timers

Prerequisite: A.21/1 -- Acknowledged basic link						
Item	**Timer**	**Reference (note)**	**Status**	**Support**	**Values**	
					Default	**Supported**
1	T.251	A.1	m		4 -- signalling frames	
NOTE: The timer value is specified in ETS 300 392-2 [1] under the given subclause.						

A.3.4 Layer 3

A.3.4.1 CMCE requirements

The supplier of the implementation shall state the support of the implementation for each of the CMCE services, features, functions, PDUs and timers presented in tables A.28 to A.40.

Table A.28: CMCE services

Prerequisite: A.4/1 -- CMCE				
Item	**CMCE service**	**Reference (note)**	**Status**	**Support**
1	Call Control (CC)	11.2	o	
2	Short Data Services (SDS)	13.2	n	n/a
3	Supplementary Services (SS)	12.2	n	n/a
NOTE: The services are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.29: CC features

Prerequisite: A.28/1 -- CC				
Item	**CC feature**	**Reference (note)**	**Status**	**Support**
1	Individual call	14.5.1	m	
2	Group call	14.5.2	m	
NOTE: The services are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.30: CC Individual call signalling functions

Prerequisite: A.29/1 -- Individual call				
Item	**Signalling function**	**Reference (note)**	**Status**	**Support**
1	On/off hook signalling	14.5.1.1	o.5	
2	Direct set-up signalling	14.5.1.1	o.5	
NOTE: The features are specified in ETS 300 392-2 [1] under the given subclause(s).				

o.5 It is mandatory to support at least one of these items.

Table A.31: CC individual call set-up functions

Prerequisite: A.29/1 -- Individual call				
Item	**Individual call set-up functions**	**Reference (note)**	**Status**	**Support**
1	Incoming call	14.5.1.1.1	m	
2	Outgoing call	14.5.1.1.2	m	
3	Colliding calls	14.5.1.1.3	m	
4	Unsuccessful call set up	14.5.1.1.4	n	n/a
5	U-plane switching, End of call set-up	14.5.1.4.1	m	
6	Call status information	14.5.1.2.2	n	n/a
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.32: CC group call set-up functions

Prerequisite: A.29/2 -- Group call				
Item	**Group call set-up functions**	**Reference (note)**	**Status**	**Support**
1	Incoming call	14.5.2.1.1	n	n/a
2	Outgoing call	14.5.2.1.2	m	
3	Colliding calls	14.5.2.1.3	m	
4	Unsuccessful call set up	14.5.2.1.4	n	n/a
5	U-plane switching, End of call set-up	14.5.2.4.1	m	
6	Call status information	14.5.2.2.2	n	n/a
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.33: CC individual call maintenance functions

Prerequisite: A.29/1 -- Individual call				
Item	**Individual call maintenance functions**	**Reference (note)**	**Status**	**Support**
1	Call restoration	14.5.1.2.4	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.34: CC group call maintenance functions

Prerequisite: A.29/2 -- Group call				
Item	**Group call maintenance functions**	**Reference (note)**	**Status**	**Support**
1	Call restoration	14.5.2.2.4	m	
2	Temporary address handling	14.5.2.2.6	n	n/a
3	Acceptance of group-addressed channel allocation	14.5.2.5	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.35: CC individual call transmission requests/grants/information functions

Prerequisite: A.29/1 -- Individual call				
Item	**Individual call transmission requests/grants/information functions**	**Reference (note)**	**Status**	**Support**
1	Request to transmit	14.5.1.2.1	m	
2	Transmission granted	14.5.1.2.1	m	
3	Transmission not granted	14.5.1.2.1	m	
4	Transmission request queued	14.5.1.2.1	m	
5	Permission to transmit withdrawn	14.5.1.2.1	m	
6	Permission to continue withdrawn call	14.5.1.2.1	n	n/a
7	End of transmission	14.5.1.2.1	m	
8	Stop-transmission order	14.5.1.2.1	m	
9	U-plane switching, during call maintenance	14.5.1.4.2	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.36: CC group call transmission requests/grants/information functions

Prerequisite: A.29/2 -- Group call				
Item	**Group Call transmission requests/grants/information functions**	**Reference (note)**	**Status**	**Support**
1	Request to transmit	14.5.2.2.1	m	
2	Transmission granted	14.5.2.2.1	m	
3	Transmission not granted	14.5.2.2.1	m	
4	Transmission request queued	14.5.2.2.1	m	
5	Permission to transmit withdrawn	14.5.2.2.1	m	
6	Permission to continue withdrawn call	14.5.2.2.1	n	n/a
7	End of transmission	14.5.2.2.1	m	
8	Stop-transmission order	14.5.2.2.1	m	
9	U-plane switching, during call maintenance	14.5.2.4.2	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.37: CC individual call clearance functions

Prerequisite: A.29/1 -- Individual call				
Item	**Individual call clearance functions**	**Reference (note)**	**Status**	**Support**
1	User initiated disconnection	14.5.1.3.1	o	
2	Reception of release request	14.5.1.3.3	m	
3	Reception of disconnection request	14.5.1.3.3	m	
4	Expiry of timers	14.5.1.3.4	m	
5	Colliding disconnections	14.5.1.3.5	n	n/a
6	U-plane switching	14.5.1.4	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.38: CC group call clearance functions

Prerequisite: A.29/2 -- Group call				
Item	**Group call clearance functions**	**Reference (note)**	**Status**	**Support**
1	User initiated disconnection	14.5.2.3.1	n	n/a
2	Reception of disconnection request	14.5.2.3.3	m	
3	Colliding disconnections	14.5.2.3.4	n	n/a
4	Expiry of timers	14.5.2.3.5	m	
5	U-plane switching	14.5.2.4	m	
NOTE: The functions are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.39: CC PDUs

Prerequisite: A.28/1 -- CC				
Item	**PDU (note 2)**	**Reference (note 1)**	**Status**	**Support**
1	D-ALERT	14.7.1.1	c3901	
2	D-CALL-PROCEEDING	14.7.1.2	m	
3	D-CALL-RESTORE	14.7.1.3	m	
4	D-CONNECT	14.7.1.4	m	
5	D-CONNECT ACKNOWLEDGE	14.7.1.5	m	
6	D-DISCONNECT	14.7.1.6	m	
7	D-INFO	14.7.1.8	m	
8	D-RELEASE	14.7.1.9	m	
9	D-SETUP	14.7.1.12	m	
10	D-TX-CEASED	14.7.1.13	m	
11	D-TX-CONTINUE	14.7.1.14	n	n/a
12	D-TX-GRANTED	14.7.1.15	m	
13	D-TX-INTERRUPT	14.7.1.16	m	
14	D-TX-WAIT	14.7.1.17	m	
15	U-ALERT	14.7.2.1	c3901	
16	U-CALL-RESTORE	14.7.2.2	m	
17	U-CONNECT	14.7.2.3	m	
18	U-DISCONNECT	14.7.2.4	m	
19	U-INFO	14.7.2.6	n	n/a
20	U-RELEASE	14.7.2.9	m	
21	U-SETUP	14.7.2.10	m	
22	U-TX-CEASED	14.7.2.11	m	
23	U-TX-DEMAND	14.7.2.12	m	
NOTE 1: The PDUs are specified in ETS 300 392-2 [1] under the given subclause. NOTE 2: The D-PDUs are received, and the U-PDUs are transmitted by the MS.				

c3901: IF A.29/1 -- On/off hook signalling
THEN m
ELSE n/a

Table A.40: CC timers

Prerequisite: A.28/1 -- CC						
Item	**Timer**	**Reference (note)**	**Status**	**Support**	**Allowed range**	**Supported values**
1	T301	14.6	m		0..30 --Sec	
2	T302	14.6	m		0..60 --Sec	
3	T303	14.6	m		0..60 --Sec	
4	T306	14.6	m		4..6 --Sec	
5	T307	14.6	m		6..8 --Sec	
6	T308	14.6	m		0..10 --Sec	
7	T310	14.6	m		≥ 5 --Sec	
8	T311	14.6	m		0..300 --Sec	
NOTE: The timers are specified in ETS 300 392-2 [1] under the given subclause(s).						

A.3.4.2 MM requirements

The supplier of the implementation shall state the support of the implementation for each of the MM features, procedures, and PDUs presented in tables A.41 to A.46.

Table A.41: MM features

Prerequisite: A.4/2 -- MM				
Item	**MM feature**	**Reference (note)**	**Status**	**Support**
1	Registration procedures	16.4.1.1	m	
2	Deregistration procedure	15.2,16.6	n	n/a
3	Change of energy economy mode procedures	15.2	n	n/a
4	Attachment/detachment of group identities procedures	16.8	o	
NOTE: The features are specified in ETS 300 392-2 [1] under the given subclause(s).				

Table A.42: MM registration procedures

Prerequisite: A.41/1 -- Registration procedure				
Item	**Registration procedures**	**Reference (note)**	**Status**	**Support**
1	MLE initiated registration	16.4.1	m	
2	User application initiated registration	16.4.2	o	
3	User application initiated registration procedure at power up	16.4.2	m	
4	Infrastructure initiated registration	16.4.3	m	
5	Colliding registrations	16.4.4	n	n/a
6	Expiry of timer T351	16.4.5	n	n/a
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.43: MLE initiated registration procedures

Prerequisite: A.42/1 -- MLE initiated registration				
Item	**MLE initiated registration procedure**	**Reference (note)**	**Status**	**Support**
1	Normal roaming registration	16.4.1.1	m	
2	Normal migration registration	16.4.1.1	n	n/a
3	Forward roaming registration	16.4.1.2	n	n/a
4	Forward migration registration	16.4.1.2	n	n/a
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.44: User application initiated registration procedures

Prerequisite: A.42/2 -- User application initiated registration				
Item	**User application initiated registration procedure**	**Reference (note)**	**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	n	
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.45: MM attachment/detachment of group identities procedures

Prerequisite: A.41/4 -- Attachment/detachment of group identities procedures				
Item	**Attachment/detachment of group identities procedures**	**Reference (note)**	**Status**	**Support**
1	Infrastructure initiated attachment/detachment of group identities procedure	16.8.1	o	
2	Infrastructure initiated group identity report request	16.8.1	c4501	
3	MS initiated attachment/detachment of group identities procedure	16.8.2	o	
4	MS initiated group identity report request	16.8.2	n	n/a
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

c4501: IF A.45/1 -- Infrastructure initiated attachment/detachment
THEN m
ELSE n/a

Table A.46: MM PDUs

Prerequisite: A.4/2 -- MM				
Item	**PDU (note 2)**	**Reference (note 1)**	**Status**	**Support**
1	D-ATTACH/DETACH GROUP IDENTITY	16.9.2.1	c4601	
2	D-ATTACH/DETACH GROUP IDENTITY ACKNOWLEDGEMENT	16.9.2.2	c4604	
3	D-MM STATUS	16.9.2.5	n	
4	D-LOCATION UPDATE ACCEPT	16.9.2.7	m	
5	D-LOCATION UPDATE COMMAND	16.9.2.8	m	
6	D-LOCATION UPDATE REJECT	16.9.2.9	m	
7	D-LOCATION UPDATE PROCEEDING	16.9.2.10	n	
8	U-ATTACH/DETACH GROUP IDENTITY	16.9.3.1	c4604	
9	U-ATTACH/DETACH GROUP IDENTITY ACKNOWLEDGEMENT	16.9.3.2	c4601	
10	U-ITSI DETACH	16.9.3.3	n	
11	U-LOCATION UPDATE DEMAND	16.9.3.4	m	
12	U-MM STATUS	16.9.3.5	n	
NOTE 1: The PDUs are specified in ETS 300 392-2 [1] under the given subclause. NOTE 2: The D-PDUs are received, and the U-PDUs are transmitted by the MS.				

c4601: IF A.45/1 -- Infrastructure initiated attachment/detachment of group identities
THEN m
ELSE n/a

c4604: IF A.45/3 -- Mobile initiated attachment/detachment of group identities
THEN m
ELSE n/a

A.3.4.3 MLE requirements

The supplier of the implementation shall state the support of the implementation for each of the MLE features, procedures, and timers presented in tables A.47 to A.50.

Table A.47: MLE features

Prerequisite: A.4/3 -- MLE				
Item	**MLE Feature**	**Reference (note)**	**Status**	**Support**
1	Initial cell selection	18.3.4.6	m	
2	Cell re-selection	18.3.4.7	m	
3	Neighbour cell enquiry	18.3.6.5	o	
NOTE: The features are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.48: MLE cell re-selection procedures

Prerequisite: A.47/2 -- Cell re-selection				
Item	**MLE procedure**	**Reference (note)**	**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	n	n/a
5	Announced type 1 cell re-selection	18.3.4.7.6	n	n/a
NOTE: The procedures are specified in ETS 300 392-2 [1] under the given subclause.				

Table A.49: MLE PDUs

Prerequisite: A.4/3 -- MLE							
Item	**PDU**	**Reception**			**Transmission**		
		Reference (note)	**Status**	**Support**	**Reference (note)**	**Status**	**Support**
1	MLE service user PDU	18.4.1.3	m		18.4.1.3	m	
2	D-NWRK-BROADCAST	18.4.1.4.1	m		n/a	n/a	n/a
3	D-NEW-CELL	18.4.1.4.2	m		n/a	n/a	n/a
4	D-PREPARE-FAIL	18.4.1.4.3	c4901		n/a	n/a	n/a
5	D-RESTORE-ACK	18.4.1.4.4	m		n/a	n/a	n/a
6	D-RESTORE-FAIL	18.4.1.4.5	m		n/a	n/a	n/a
7	U-PREPARE	n/a	n/a	n/a	18.4.1.4.6	m	
8	U-RESTORE	n/a	n/a	n/a	18.4.1.4.7	m	
9	D-MLE-SYNC	18.4.2.1	m		n/a	n/a	n/a
10	D-MLE-SYSINFO	18.4.2.2	m		n/a	n/a	n/a
NOTE: The PDUs are specified in ETS 300 392-2 [1] under the given subclause.							

c4901: IF (A.47/3) -- Neighbour cell enquiry
THEN m
ELSE n/a

Table A.50: MLE timers

Prerequisite: A.4/3 -- MLE						
Item	**Timer**	**Reference (note)**	**Status**	**Support**	**Values**	
					Allowed	**Supported**
1	T.370	18.6.1	m		5 -- Sec	
NOTE: The timer value is specified in ETS 300 392-2 [1] under the given subclause.						

A.3.5 Security

The supplier of the implementation shall state the support of the implementation for each of the security features presented in tables A.51 to A.52.

Table A51: V+D Security class supported

Prerequisite: A.4/7 -- Security				
Item	**Security class**	**Reference (note)**	**Status**	**Support**
1	Class 1	6.1.1	o.6	
2	Class 2	6.1.1	o.6	
3	Class 3	6.1.1	o.6	
NOTE: The features are specified in ETS 300 392-7 [4] under the given subclause.				

o.6: It is mandatory to support at least one of these items

Table A.52: Security features

Prerequisite: A.4/7 -- Security				
Item	**Security feature**	**Reference (note)**	**Status**	**Support**
1	Authentication	4.1, 4.4.1, 4.4.2	c5201	
2	OTAR protocol functions	4.2, 4.4.3, 4.4.4, 4.4.5	c5201	
3	Secure enable/disable	5	m	
4	Air interface encryption	6	c5202	
5	End-to-end encryption	7	n	n/a
6	Encrypted Short Identity	4.2.5	c5202	
NOTE: The features are specified in ETS 300 392-7 [7] under the given subclause.				

c5201: IF A.51/3 -- Security class 3
THEN m
ELSE o

c5202: IF (A.51/2 or A.51/3) -- Security class 2 or Security class 3
THEN m
ELSE n/a

A.3.5.1 Authentication

The supplier of the implementation shall state the support of the implementation for each of the authentication types, procedures and PDUs presented in tables A.53 to A.55.

Table A.53: Authentication types

Prerequisite: A.52/1 -- Authentication				
Item	**Authentication procedures**	**Reference (note)**	**Status**	**Support**
1	Infrastructure initiated authentication	4.1.2	c5301	
2	Terminal initiated authentication	4.1.3	c5302	
3	Infrastructure initiated authentication made mutual by terminal	4.1.4	c5303	
4	Terminal initiated authentication made mutual by infrastructure	4.1.4	c5304	
5	Equipment authentication	4.1.6	n	n/a
NOTE: The procedures are specified in ETS 300 392-7 [6] under the given subclause.				

o.7 It is mandatory to support at least one of these items

c5301: IF A.51/3 -- Security class 3
THEN m
ELSE o.7

c5302: IF A.51/3 -- Security class 3
THEN o
ELSE o.7

c5303: IF A.53/1 -- Infrastructure initiated authentication
THEN m
ELSE n/a

c5304: IF A.53/2 -- Terminal initiated authentication
THEN m
ELSE n/a

Table A.54: Authentication procedures

Prerequisite: A.52/1 -- Authentication				
Item	**Authentication procedures**	**Reference (note)**	**Status**	**Support**
1	Infrastructure initiated authentication	4.4.2.1	c5401	
2	Terminal initiated authentication	4.4.2.2	c5402	
3	Infrastructure initiated authentication made mutual by terminal	4.4.2.3	c5401	
4	Terminal initiated authentication made mutual by infrastructure	4.4.2.4	c5402	
5	Infrastructure initiated authentication during registration	4.4.2.5	c5401	
6	Terminal initiated authentication during registration	4.4.2.6	c5402	
7	Authentication initiated by terminal during registration and made mutual by the infrastructure	4.4.2.7	c5402	
8	Authentication initiated by infrastructure during registration and made mutual by the terminal	4.4.2.8	c5401	
NOTE: The procedures are specified in ETS 300 392-7 [9] under the given subclause.				

c5401: IF A.53/1 -- Infrastructure initiated authentication
THEN m
ELSE n/a

c5402: IF A.53/2 -- Terminal initiated authentication
THEN m
ELSE n/a

Table A.55: PDUs for authentication

Prerequisite: A.52/1 -- Authentication				
Item	**PDU**	**Reference (note)**	**Status**	**Support**
1	D-AUTHENTICATION DEMAND	4.4.7.1	c5501	
2	D-AUTHENTICATION REJECT	4.4.7.2	c5502	
3	D-AUTHENTICATION RESPONSE	4.4.7.3	c5502	
4	D-AUTHENTICATION RESULT	4.4.7.4	m	
5	U-AUTHENTICATION DEMAND	4.4.7.9	c5502	
6	U-AUTHENTICATION REJECT	4.4.7.10	c5501	
7	U-AUTHENTICATION RESPONSE	4.4.7.11	c5501	
8	U-AUTHENTICATION RESULT	4.4.7.12	m	
9	U-TEI PROVIDE PDU	4.4.7.20	m	
NOTE: The PDUs are specified in ETS 300 392-7 [10] under the given subclause.				

c5501: IF A.53/1 -- Infrastructure initiated authentication
THEN m
ELSE n/a

c5502: IF A.53/2 -- Terminal initiated authentication
THEN m
ELSE n/a

A.3.5.2 OTAR protocol functions

The supplier of the implementation shall state the support of the implementation for each of the OTAR procedures and PDUs presented in tables A.56 to A.57.

Table A.56: OTAR procedures

Prerequisite: A.52/2 -- OTAR				
Item	**OTAR procedure**	**Reference (note)**	**Status**	**Support**
1	CCK delivery	4.4.3, 4.4.3.1, 4.4.3.2	c5601	
2	OTAR GCK	4.4.5, 4.4.5.1, 4.4.5.2	c5602	
3	OTAR SCK	4.4.4, 4.4.4.1, 4.4.4.2	c5603	
4	Key change protocol	4.4.6	m	
NOTE: The procedures are specified in ETS 300 392-7 [5] under the given subclause.				

c5601: IF A.51/3 -- Security Class 3
THEN m
ELSE n/a

c5602: IF A.51/3 -- Security Class 3
THEN o
ELSE n/a

c5603: IF A.51/2 -- Security Class 2
THEN o
ELSE n/a

Table A.57: OTAR PDUs

Prerequisite: A.52/2 -- OTAR				
Item	**OTAR PDU**	**Reference (note)**	**Status**	**Support**
1	D-CK-CHANGE DEMAND	4.4.7.5	m	
2	D-OTAR CCK Provide	4.4.7.6	c5701	
3	D-OTAR GCK Provide	4.4.7.7	c5702	
4	D-OTAR SCK Provide	4.4.7.8	c5703	
5	U-CK CHANGE RESULT	4.4.7.13	m	
6	U-OTAR CCK Demand	4.4.7.14	c5701	
7	U-OTAR CCK Result	4.4.7.15	c5701	
8	U-OTAR GCK Demand	4.4.7.16	c5702	
9	U-OTAR GCK Result	4.4.7.17	c5702	
10	U-OTAR SCK Demand	4.4.7.18	c5703	
11	U-OTAR SCK Result	4.4.7.19	c5703	
NOTE: The PDUs are specified in ETS 300 392-7 [12] under the given subclause.				

c5701: IF A.56/1 -- CCK delivery
THEN m
ELSE n/a

c5702: IF A.56/2 -- OTAR GCK
THEN m
ELSE n/a

c5703: IF A.56/3 -- OTAR SCK
THEN m
ELSE n/a

A.3.5.3 Secure enable/disable

The supplier of the implementation shall state the support of the implementation for each of the secure enable/disable procedures and PDUs presented in tables A.59 and A.60.

Table A.58: Secure enable/disable types

Prerequisite: A.52/3 -- Secure enable/disable				
Item	**Secure enable/disable procedure**	**Reference (note)**	**Status**	**Support**
1	Disable ITSI temporarily	5.3.2	m	
2	Disable ITSI permanently	5.3.2	c5801	
3	Enable ITSI	5.3.5	m	
4	Disable TEI temporarily	5.3.1	m	
5	Disable TEI permanently	5.3.1	c5801	
6	Enable TEI	5.3.4	m	
NOTE: The procedures are specified in ETS 300 392-7 [7] under the given subclause.				

c5801: IF A.53/1 -- Infrastructure initiated authentication
THEN m
ELSE o

Table A.59: Secure enable/disable procedures

Prerequisite: A.52/3 -- Secure enable/disable				
Item	**Secure enable/disable procedure**	**Reference (note)**	**Status**	**Support**
1	Permanent disabling of an MS using authentication.	5.4.3.1	c5901	
2	Temporary disabling of an MS using authentication.	5.4.3.1	c5901	
3	Temporary disabling of an MS without authentication.	5.4.5	c5902	
4	Enabling an MS using authentication.	5.4.3.2	c5901	
5	Enabling an MS without authentication.	5.4.4	c5902	
NOTE: The procedures are specified in ETS 300 392-7 [6] under the given subclause.				

c5901: IF A.53/1 -- Infrastructure initiated authentication
THEN m
ELSE n/a

c5902: IF A.53/1 -- Infrastructure initiated authentication
THEN o
ELSE m

Table A.60: Secure enable/disable PDUs

Prerequisite: A.52/3 -- Secure enable/disable				
Item	**PDU**	**Reference (note)**	**Status**	**Support**
1	D-DISABLE	5.4.8.1	m	
2	D-ENABLE	5.4.8.2	m	
3	U-DISABLE STATUS	5.4.8.3	m	
NOTE: The PDUs are specified in ETS 300 392-7 [4] under the given subclause.				

A.3.5.4 AI encryption procedures

The supplier of the implementation shall state the support of the implementation for each of the AI encryption procedures presented in table A.61.

Table A.61: AI encryption procedures

Prerequisite: A.52/4 -- AI encryption				
Item	**AI encryption procedure**	**Reference (note)**	**Status**	**Support**
1	DCK AI encryption	6.4	c6101	
2	SCK AI encryption	6.4	c6102	
3	CCK AI encryption	6.4	c6101	
4	MGCK AI encryption	6.4	c6103	
NOTE: The procedures are specified in ETS 300 392-7 [2] under the given subclause.				

c6101: IF A.51/3 -- Security class 3
THEN m
ELSE n/a

c6102: IF A.51/2 -- Security class 2
THEN o
ELSE n/a

c6103: IF A.51/3 -- Security class 3
THEN o
ELSE n/a

A.4 Requirements tables for Ud air interface

The requirements in this clause apply to TETRA systems implementing the Ud interface.

A.4.1 DMO Mode of Operation

The supplier of the implementation shall state the support of the implementation for each of the modes of operation presented in tables A.62.

Table A.62: DMO mode of operation

Prerequisite: A.1/2 -- Ud				
Item	**Mode of operation**	**Reference**	**Status**	**Support**
1	DMO Mobile Station to Mobile Station (MS-MS) operation	ETS 300 396-3 [16]	m	
2	DMO Type 1 Repeater operation	ETS 300 396-4 [17]	(note 1)	
3	DMO Gateway operation	ETS 300 396-5 [18]	(note 2)	
4	DMO Type 2 Repeater operation	ETS 300 396-7 [20]	(note 3)	
NOTE 1: Repeater Type 1 operation at the Ud air interface is not covered by this edition of the present document NOTE 2: Gateway operation at the Ud air interface is not covered by this edition of the present document NOTE 3: Repeater Type 2 operation at the Ud air interface is not covered by this edition of the present document				

A.4.2 Mobile Station to Mobile Station Operation

A.4.2.1 General for Mobile Station to Mobile Station Operation

The supplier of the implementation shall state the support of the implementation for each of the DMO MS to MS capabilities, services, priorities, and data types presented in tables A.63 to A.69.

Table A.63: General MS to MS protocol capabilities

Prerequisite: A.62/1 -- MS to MS operation				
Item	**Capability name**	**Reference (note)**	**Status**	**Support**
1	Direct Mode Call Control (DMCC)	6	m	
2	Upper Medium Access Control (Upper MAC)	8	m	
3	Lower Medium Access Control (Lower MAC)	8	m	
4	Radio Layer	ETS 300 396-2 [15]	m	
5	Security	ETS 300 396-6 [19]	m	
NOTE: The capabilities are specified in ETS 300 396-3 [16] under the given clause(s), unless otherwise stated.				

Table A.64: DMO MS to MS services

Prerequisite: A.62/1 -- MS to MS operation				
Item	**DMCC service**	**Reference (note)**	**Status**	**Support**
1	Circuit mode call	6.2	o.8	
2	Short Data Service (SDS)	6.3	c6401	
NOTE: The services are specified in ETS 300 396-3 [16] under the given subclause.				

o.8 It is mandatory to support at least one of these items

c6401: IF A.86/2 OR A.86/3 -- OTAR or Secure Enable/Disable feature
THEN m
ELSE o.8

Table A.65: Call priorities

Prerequisite: A.63/1 -- MS to MS operation				
Item	**Call priority**	**Reference (note)**	**Status**	**Support**
1	Normal priority call	5.4	m	
2	High priority call	5.4	o	
3	Pre-emptive priority call	5.4	o	
4	Emergency pre-emptive priority call	5.4	o	
5	Recent user priority service	5.4	o	
NOTE: The call priorities are specified in ETS 300 396-3 [16] under the given subclause.				

Table A.66: Circuit mode services

Prerequisite: A.64/1 -- Circuit mode call				
Item	**Circuit mode service**	**Reference (note)**	**Status**	**Support**
1	Individual circuit mode call	6.2	o.9	
2	Group circuit mode call	6.2	o.9	
3	Outgoing call set-up	6.2	o.10	
4	Incoming call set-up	6.2	o.10	
5	Call set-up with presence check	6.2	c6601	
6	Call set-up without presence check	6.2	c6602	
NOTE: The services are specified in ETS 300 396-3 [16] under the given subclause.				

o.9 It is mandatory to support at least one of these items

o.10 It is mandatory to support at least one of these items

o.11 It is mandatory to support at least one of these items

c6601: IF A.66/1 -- Individual circuit mode call capability
THEN o.11
ELSE n/a

c6602: IF A.66/2 -- Group circuit mode call capability
THEN m
ELSE o.11

c6603: IF A.66/3 -- Outgoing call set-up capability
THEN o
ELSE n/a

Table A.67: DMCC short data service call capabilities

Prerequisite: A.64/2 -- Short data service				
Item	**Call capability**	**Reference (note)**	**Status**	**Support**
1	Group address SDS capability	6.3	o.12	
2	Individual address SDS capability	6.3	c6701	
3	Sending short data	6.3.1	c6702	
4	Receiving short data	6.3.2	c6702	
5	Unacknowledged short data service	6.3	c6703	
6	Acknowledged short data service not including data in Acknowledgement	6.3	c6704	
7	Acknowledged short data service including data in Acknowledgement	6.3	c6705	
8	Include FCS in transmission	6.3	c6706	
NOTE: The capabilities are specified in ETS 300 396-3 [16] under the given subclause.				

o.12 It is mandatory to support at least one of these items

o.13 It is mandatory to support at least one of these items

o.14 It is mandatory to support at least one of these items

c6701: IF A.86/2 OR A.86/3 -- OTAR or Secure Enable/Disable feature
THEN m
ELSE o.12

c6702: IF A.86/2 OR A.86/3 -- OTAR or Secure Enable/Disable feature
THEN m
ELSE o.13

c6703: IF A.67/1 -- Group address SDS capability
THEN m
ELSE o

c6704: IF A.86/2 -- OTAR feature
THEN m
ELSE o.14

c6705: IF A.86/2 OR A.86/3 -- OTAR or Secure Enable/Disable feature
THEN m
ELSE o.14

c6706: IF A.67/3 -- Sending short data
THEN o
ELSE n/a

Table A.68: Short data message types

Prerequisite: A.64/2 -- Short Data Service (SDS)				
Item	**Message types**	**Reference (note)**	**Status**	**Support**
1	Pre-defined short data messages	6.3	o	
2	User-defined short data messages	6.3	o	
3	Over The Air Re-keying (OTAR)	6.3	c6801	
4	Enable/disable	6.3	c6802	
NOTE: The data message types are specified in ETS 300 396-3 [16] under the given subclause.				

c6801: IF A.86/2 -- OTAR feature
THEN m
ELSE n/a

c6802: A.86/3 -- Secure Enable/Disable feature
THEN m
ELSE n/a

Table A.69: SDS user defined data

Prerequisite: A.68/2 -- User defined short data				
Item	**SDS user defined data types**	**Reference**	**Status**	**Support**
1	User defined data 1 (16 bits)	5.4	o.15	
2	User defined data 2 (32 bits)	5.4	o.15	
3	User defined data 3 (64 bits)	5.4	o.15	
4	User defined data 4 (up to 2047 bits)	5.4	o.15	
NOTE 1: The user defined data types are specified in ETS 300 396-3 [16] under the given subclause.				

o.15: It is mandatory to support at least one of these items

A.4.2.2 Physical layer

The supplier of the implementation shall state the support of the implementation for each of the physical layer capabilities, requirements and parameters presented in tables A.70 to A.74.

Table A.70: General Layer 1 capabilities

Prerequisite: A.1/2 -- Ud				
Item	**Capability or feature name**	**Reference**	**Status**	**Support**
1	Protected circuit mode data	6.6.2	o	
2	Switchable DMO power classes	6.4.1	o	
NOTE: The requirements are specified in ETS 300 396-2 [15] under the given subclause.				

Table A.71: Physical layer requirements

Prerequisite: A.1/2 -- Ud				
Item	**Requirement**	**Reference (note)**	**Status**	**Support**
1	Modulation	5.2	m	
2	Frequency bands and channel allocation	6.2	m	
3	Unwanted conducted emission over the useful part of the burst	6.4.3.2.1	m	
4	Unwanted conducted emission during the switching transients	6.4.3.2.2	m	
5	Unwanted conducted discrete spurious emission far from the carrier	6.4.3.3.1	m	
6	Unwanted conducted wideband noise emission far from the carrier	6.4.3.3.2	m	
7	Unwanted conducted emission during LCH	6.4.3.4	m	
8	Unwanted conducted emission in the non-transmit state	6.4.3.5	m	
9	Unwanted radiated emissions	6.4.4	m	
10	RF output power time mask	6.4.6	m	
11	RF output power in non-active transmit state	6.4.6	m	
12	Transmitter intermodulation attenuation	6.4.7.2	m	
13	Blocking characteristics	6.5.1.2	m	
14	Spurious response rejection	6.5.2.2	m	
15	Intermodulation response rejection	6.5.3.2	m	
16	Unwanted conducted emission in reception	6.5.4.2	m	
17	Unwanted radiated emission	6.5.5	m	
18	Modulation accuracy	6.6.1.2	m	
19	Nominal error rate	6.6.2.1	m	
20	Dynamic reference sensitivity performance	6.6.2.2	m	
21	Reference interference performance	6.6.2.3	m	
22	Static reference sensitivity performance	6.6.2.4	m	
23	MS receiver performance for synchronization burst acquisition	6.6.2.5	m	
24	DM-MS synchronization requirement	7.2	m	
25	Relationship between counters	7.3.2	m	
26	RF frequency accuracy	7.4	m	
27	Requirement for synchronization of a slave MS	7.5	m	
28	Mapping of logical channels	9.4.5	m	
NOTE: The requirements are specified in ETS 300 396-2 [15] under the given subclause.				

Table A.72: Output power and power class requirements and parameters

Prerequisite: A.1/2 -- Ud						
Item	**Requirement and parameter**	**Reference (note)**	**Status**	**Support**	**Allowed values**	**Supported values**
1	Output power and power class	6.4.2	m		[2]	
NOTE: The parameters are specified in ETS 300 396-2 [15] under the given subclause.						

Table A.73: RF carrier frequency bands

Prerequisite: A.1/2 -- Ud						
Item	**Requirement and parameter**	**Reference (note)**	**Status**	**Support**	**Allowed range (MHz)**	**Supported range**
1	RF carrier frequencies	4.3.1.1	m		380 to 385 and 390 to 395	
NOTE: The parameters are specified in this standard under the given subclause.						

Table A.74: Extreme ambient temperature requirements

Prerequisite: A.1/2 -- Ud				
Item	**Requirement**	**Reference (note)**	**Status**	**Support**
1	Extreme temperatures	6.2.2	m	
NOTE: The requirements are specified in ETS 300 394-1 [7] under the given subclause.				

A.4.2.3 Layer 2

A.4.2.3.1 Lower MAC layer

The supplier of the implementation shall state the support of the implementation for each of the error control schemes presented in table A.75.

Table A.75: Error control schemes of Lower DM-MAC

Prerequisite: A.63/3 -- Lower DM-MAC				
Item	**Error control scheme**	**Reference (note)**	**Status**	**Support**
1	Error control scheme for Synchronization Signalling CHannel (SCH/S).	8.3.1.1	m	
2	Error control scheme for Half-slot Signalling CHannel (SCH/H) and Stealing CHannel (STCH).	8.3.1.2	m	
3	Error control scheme for Full-slot Signalling Channel (SCH/F).	8.3.1.3	m	
NOTE: The error control schemes are specified in ETS 300 396-2 [15] under the given subclause.				

A.4.2.3.2 Upper MAC layer

The supplier of the implementation shall state the support of the implementation for each of the Upper MAC layer procedures, PDUs and number of frames presented in tables A.76 to A.79.

Table A.76: DM channel usage procedures

Prerequisite: A.63/2 -- Upper DM-MAC for MS to MS operation				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Transmitting DM-OCCUPIED	8.4.5.1.7	c7601	
2	Transmitting DM-RESERVED	8.4.6.1	c7601	
NOTE: The procedures are specified in ETS 300 396-3 [16] under the given subclause.				

c7601: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

Table A.77: DM-MAC signalling procedures

Prerequisite: A.63/2 -- Upper DM-MAC for MS to MS operation				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Transmission of messages	8.5.6.1	c7701	
2	Indicating frames available for requests	8.5.7.2.1	c7702	
NOTE: The procedures are specified in ETS 300 396-3 [16] under the given subclause.				

c7701: IF A.66/3 OR A.67/3 -- Outgoing call set-up capability or sending short data
THEN m
ELSE n/a

c7702: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

Table A.78: DM-MAC PDUs

Prerequisite: A.63/2 -- Upper DM-MAC for MS to MS operation						
Item	**PDU**	**Reference (note)**	**Reception**		**Transmission**	
			Status	**Support**	**Status**	**Support**
1	DMAC-SYNC	9.1.1	m		c7801	
2	DMAC-DATA	9.2.1	m		c7802	
3	DM-RESERVED	9.4.1	c7803		c7804	
NOTE: The PDUs are specified in ETS 300 396-3 [16] under the given subclause.						

c7801: IF A.66/3 OR A.67/3 -- Outgoing call set-up capability or sending short data
THEN m
ELSE
IF (A.66/4 AND A.66/5) -- Incoming call set-up with presence check capability
OR A.81/5 -- or receiving acknowledge short data
THEN o
ELSE n/a

c7802: IF A.66/3 OR A.67/3 -- Outgoing call set-up capability or sending short data
THEN o
ELSE n/a

c7803: IF A.66/3 OR A.67/3 -- Outgoing call set-up capability or sending short data
THEN m
ELSE o

c7804: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

Table A.79: Number of frames transmitted by DM-MAC

Prerequisite: A.63/2 -- Upper DM-MAC for MS to MS operation						
Item	**Message type**	**Reference (note)**	**Status**	**Support**	**Values**	
					Allowed	**Supported**
1	DM-SETUP (new call setup)	A.5	c7901		2...4	
2	DM-SETUP PRES (new call setup)	A.5	c7902		2...4	
3	DM-SDS DATA (new call set-up)	A.5	c7903		2...4	
4	DM-SDS UDATA (new call set-up)	A.5	c7904		2...4	
NOTE: The constant is specified in ETS 300 396-3 [16] under the given subclause.						

c7901: IF A.80/1 -- Outgoing call set-up without presence check capability
THEN m
ELSE n/a

c7902: IF A.80/3 -- Outgoing call set-up with presence check capability
THEN m
ELSE n/a

c7903: IF A.81/1 -- Sending acknowledge short data
THEN m
ELSE n/a

c7904: IF A.81/2 -- Sending unacknowledge short data
THEN m
ELSE n/a

A.4.2.4 Layer 3

The supplier of the implementation shall state the support of the implementation for each of the DMCC procedures, functions, PDUs, timers and constants presented in tables A.64 to A.85.

Table A.80: Circuit mode procedures

Prerequisite: A.64/1 -- Circuit mode call				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Outgoing call set-up without presence check	6.2.1.1	c8001	
2	Incoming call set-up without presence check	6.2.1.2	n	n/a
3	Outgoing call set-up with presence check	6.2.2.1	c8002	
4	Incoming call set-up with presence check	6.2.2.2	n	n/a
5	Late entry by called party	6.2.3.2	n	n/a
6	Accept call pre-emption during occupation	6.2.4.1	c8003	
7	Release of radio resource at the end of transmission	6.2.4.1	c8004	
8	Master release of resource by user application	6.2.4.1	c8004	
9	Release of radio resource at DT311 timeout	6.2.4.1	c8003	
10	Request for pre-emption during occupation	6.2.4.2	c8005	
11	Transmitting Party Number Identification (TPNI)	6.2.4.3	n	n/a
12	Accept call pre-emption during reservation	6.2.5.1	c8003	
13	Accept call change-over during reservation	6.2.5.1	c8003	
14	Master release of resource by user application	6.2.5.1	c8004	
15	Request for change-over during reservation	6.2.5.2	c8006	
16	Initiate pre-emption of ongoing short data call	6.2.5.3	n	n/a
17	Initiate a new call by pre-emption	6.2.6	n	n/a
NOTE: The procedures are specified in ETS 300 396-3 [16] under the given subclause.				

c8001: IF A.66/3 AND A.66/6 -- Outgoing call set-up without presence check capability
THEN m
ELSE n/a

c8002: IF A.66/3 AND A.66/5 -- Outgoing call set-up with presence check capability
THEN m
ELSE n/a

c8003: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

c8004: IF A.66/3 -- Outgoing call set-up capability
THEN o
ELSE n/a

c8005: IF A.66/3 AND A.66/4 -- Outgoing call set-up capability and incoming call set-up capability
AND (A.65/3 OR A. 65/4) and pre-emptive or emergency pre-emptive call capability
THEN o
ELSE n/a

c8006: A.66/3 AND A.66/4 -- Outgoing call set-up capability and incoming call set-up capability
THEN o
ELSE n/a

Table A.81: DMCC short data service procedures

Prerequisite: A.64/2 -- Short Data Service (SDS)				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Sending unacknowledged short data on an available channel	6.3.1.1.1	c8101	
2	Sending acknowledged short data on an available channel	6.3.1.1.2	c8102	
3	Sending short data not related to ongoing circuit mode call by pre-emption	6.3.1.2	n	n/a
4	Sending short data related to ongoing circuit mode call	6.3.1.4	n	n/a
5	Receiving acknowledged short data	6.3.2.2	c8103	
NOTE: The procedures are specified in ETS 300 396-3 [16] under the given subclause.				

c8101: IF A.67/3 AND A.67/5 -- Sending short data and Unacknowledged short data service
THEN o
ELSE n/a

c8102: IF A.67/3 AND -- Sending short data and
(A.67/6 OR A.67/7) -- Acknowledged short data service
THEN m
ELSE n/a

c8103: IF A.67/4 AND -- Receiving short data and
(A.67/6 OR A.67/7) -- Acknowledged short data service
THEN m
ELSE n/a

Table A.82: Short data service error protection function

Prerequisite: A.64/2 -- Short Data Service (SDS)				
Item	**Function**	**Reference (note)**	**Status**	**Support**
1	FCS checking in reception	6.3.4	c8201	
2	FCS calculation in transmission	6.3.4	c8202	
NOTE: The features are specified in ETS 300 396-3 [16] under the given subclause.				

c8201: IF A.67/4 -- Receiving short data
THEN m
ELSE n/a

c8203: IF A.67/8 -- FCS Included in transmission
THEN m
ELSE n/a

Table A.83: DMCC PDUs

Prerequisite: A.63/1 -- DMCC for MS to MS operation						
Item	**PDU**	**Reference (note)**	**Reception**		**Transmission**	
			Status	**Support**	**Status**	**Support**
1	DM-SETUP	9.5.1	n	n/a	c8301	
2	DM-SETUP PRES	9.5.2	n	n/a	c8302	
3	DM-CONNECT	9.5.3	c8302		n	n/a
4	DM-DISCONNECT	9.5.4	c8302		n	n/a
5	DM-CONNECT ACK	9.5.5	n	n/a	c8302	
6	DM-OCCUPIED	9.5.6	c8304		c8303	
7	DM-RELEASE	9.5.7	n	n/a	c8303	
8	DM-TX CEASED	9.5.8	c8304		c8303	
9	DM-TX REQUEST	9.5.9	c8303		c8305	
10	DM-TX ACCEPT	9.5.10	c8305		c8303	
11	DM-PREEMPT	9.5.11	c8304		c8306	
12	DM-PRE ACCEPT	9.5.12	c8306		c8304	
13	DM-REJECT	9.5.13	c8307		c8308	
14	DM-SDS UDATA	9.5.15	n	n/a	c8309	
15	DM-SDS DATA	9.5.16	c8310		c8311	
16	DM-SDS ACK	9.5.17	c8311		c8310	
NOTE: The PDUs are specified in ETS 300 396-3 [16] under the given subclause.						

c8301: IF A.80/1 -- Outgoing call set-up without presence check capability
THEN m
ELSE n/a

c8302: IF A.80/3 -- Outgoing call set-up with presence check capability
THEN m
ELSE n/a

c8303: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

c8304: IF A.66/3 OR A.67/3 -- Outgoing call set-up capability or sending short data
THEN m
ELSE n/a

c8305: IF A.80/10 -- Request for pre-emption during occupation
THEN m
ELSE n/a

c8306: IF A.80/15 -- Request for change-over during reservation
THEN m
ELSE n/a

c8307: IF A.80/10 OR A.80/15 -- Request for pre-emption or request for change-over
OR A.81/2 -- or sending acknowledge short data
THEN m
ELSE n/a

c8308: IF A.66/3 OR A.81/2 -- Outgoing call set-up capability or sending acknowledge short data
THEN o
ELSE n/a

c8309: IF A.81/1 -- Sending unacknowledge short data
THEN m
ELSE n/a

c8310: IF A.81/5 -- Receiving acknowledge short data
THEN m
ELSE n/a

c8311: IF A.81/2 -- Sending acknowledge short data
THEN m
ELSE n/a

Table A.84: DMCC constants

Prerequisite: A.63/1 -- DMCC for MS to MS operation						
Item	**Constant**	**Reference (note)**	**Status**	**Support**	**Values**	
					Allowed	**Supported**
1	DN303	A.2	c8401		1...3	
2	DN314	A.2	c8402		1...6	
3	DN316	A.2	c8403		1...4	
NOTE: The constant is specified in ETS 300 396-3 [16] under the given subclause.						

c8401: IF A.80/3 -- Outgoing call set-up with presence check capability
THEN m
ELSE n/a

c8402: IF A.81/1 -- Sending unacknowledge short data
THEN m
ELSE n/a

c8403: IF A.81/2 -- Sending acknowledge short data
THEN m
ELSE n/a

Table A.85: DMCC timers

Prerequisite: A.63/1 -- DMCC for MS to MS operation						
Item	**Timer**	**Reference (note)**	**Status**	**Support**	**Values**	
					Default	**Supported**
1	DT303	A.1	c8501		250 – mSec	
2	DT311	A.1	c8502		300 – Sec	
3	DT316	A.1	c8503		400 – mSec	
NOTE: The timer value is specified in ETS 300 396-3 [16] under the given subclause.						

c8501: IF A.80/3 -- Outgoing call set-up with presence check capability
THEN m
ELSE n/a

c8502: IF A.66/3 -- Outgoing call set-up capability
THEN m
ELSE n/a

c8503: IF A.81/2 -- Sending acknowledge short data
THEN m
ELSE n/a

A.4.2.5 Security

The supplier of the implementation shall state the support of the implementation for each of the security features presented in table A.86.

Table A.86: Security features

Prerequisite: A.63/5 -- Ud security				
Item	**Security feature**	**Reference (note)**	**Status**	**Support**
1	Air interface encryption, including implicit authentication	5, 6	c8601	
2	Air interface key management (OTAR)	7	o	
3	Secure enable/disable	8	m	
4	End-to-end encryption	9	n	n/a
NOTE: The features are specified in ETS 300 396-6 [19] under the given subclause.				

A.4.2.5.1 Air interface encryption

The supplier of the implementation shall state the support of the implementation for each of the procedures presented in tables A.87.

Table A.87: Air interface encryption procedures

Prerequisite: A.86/1 -- Ud Air interface encryption				
Item	**Procedures**	**Reference (note)**	**Status**	**Support**
1	Air interface encryption mechanism	6.3	c8701	
NOTE: The procedures are specified in ETS 300 396-6 [19] under the given subclause.				

c8701: IF A.86/2 -- Ud AI key management
THEN m
ELSE o

A.4.2.5.2 OTAR in DMO

The supplier of the implementation shall state the support of the implementation for each of the DMO OTAR roles and PDUs presented in tables A.88 to A.90.

Table A.88: DMO OTAR roles

Prerequisite: A.86/2 -- Ud AI key management				
Item	**DMO OTAR role**	**Reference (note)**	**Status**	**Support**
1	Key sealer	7.4	o.16	
2	Key user	7.4	o.16	
3	Key holder	7.4	o.16	
NOTE: The features are specified in ETS 300 396-6 [19] under the given subclause.				

o.16 It is mandatory to support at least one of these items

Table A.89: DMO OTAR procedures

Prerequisite: A.86/2 -- Ud AI key management				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Key transfer mechanism for transferring the key from key holder to key user	7.5.1	c8901	
2	Key transfer mechanism for transferring the key from key holder acting as a relay for key sealer to key user	7.5.2	c8902	
3	Key transfer mechanism for distributing the SCK unsolicited	7.5.3	c8903	
NOTE: The procedures are specified in ETS 300 396-6 [19] under the given subclause.				

c8901: IF A.88/3 -- Key holder
THEN m
ELSE IF A.88/2 -- Key user
THEN o
ELSE n/a

c8902: IF A.88/1 OR A.88/3 -- Key sealer or key holder
THEN m
ELSE o

c8903: IF A.88/2 -- Key user
THEN m
ELSE n

Table A.90: DMO OTAR PDUs

Prerequisite: A.86/2 -- Ud AI key management						
Item	**PDU**	**Reference**	**Reception**		**Transmission**	
		(note)	**Status**	**Support**	**Status**	**Support**
1	OTAR SCK Provide	7.6.1	c9001		c9002	
2	OTAR SCK Demand	7.6.2	c9002		c9001	
3	OTAR SCK Result	7.6.3	c9002		c9001	
NOTE: The features are specified in ETS 300 396-6 [19] under the given subclause.						

c9001: IF A.88/2 OR A.88/3 -- Key user or key holder
THEN m
ELSE o

c9002: IF A.88/1 OR A.88/3 -- Key sealer or key holder
THEN m
ELSE o

A.4.2.5.3 Secure enable/disable in DMO

The supplier of the implementation shall state the support of the implementation for each of the DMO secure enable/disable roles and PDUs presented in tables A.91 to A.93.

Table A.91: DMO secure enable/disable roles

Prerequisite: A.86/3 -- Ud enable/disable				
Item	**DMO secure enable/disable role**	**Reference (note 1)**	**Status**	**Support**
1	Manager	8.5	n	n/a
2	Target	8.5	m	
NOTE 1: The features are specified in ETS 300 396-6 [19] under the given subclause. NOTE 2: An implementation may support more than one role.				

Table A.92: DMO secure enable/disable procedures

Prerequisite: A.91/2 -- Ud secure enable/disable target role				
Item	**Procedure**	**Reference (note)**	**Status**	**Support**
1	Disabling of target	8.7.3.1	m	
2	Enabling of target	8.7.3.2	m	
3	TEI delivery	8.7.3.3	m	
NOTE: The procedures are specified in ETS 300 396-6 [19] under the given subclause.				

Table A.93: DMO secure enable/disable PDUs

Prerequisite: A.91/2 -- Ud secure enable/disable target role						
Item	**PDU**	**Reference**	**Reception**		**Transmission**	
		(note)	**Status**	**Support**	**Status**	**Support**
1	ENDIS COMMAND	8.7.4.1	m		n	n/a
2	ENDIS AUTHENTICATE	8.7.4.2	n	n/a	m	
3	ENDIS COMMAND CONFIRM	8.7.4.3	m		n	n/a
4	ENDIS RESULT	8.7.4.4	n	n/a	m	
5	ENDIS TEI PROVIDE	8.7.4.5	n	n/a	m	
6	ENDIS REJECT	8.7.4.6	n	n/a	n	n/a
NOTE: The features are specified in ETS 300 396-6 [19] under the given subclause.						

A.4.3 Repeater Type 1 operation

Requirements for Repeater Type 1 operation at the Ud air interface are not covered by this edition of the present document. Requirements for Repeater Type 1 operation will be included in a future edition.

A.4.4 Repeater Type 2 operation

Requirements for Repeater Type 2 operation at the Ud air interface are not covered by this edition of the present document. Requirements for Repeater Type 2 operation will be included in a future edition.

A.4.5 Gateway operation

Requirements for Gateway operation at the Ud air interface are not covered by this edition of the present document. Requirements for Gateway operation will be included in a future edition.

Annex B (normative): Declarations on parameters supported

B.1 Introduction

The following tables contain extracts from the PICS document ETS 300 392-14 [6]. These tables supplement the RT giving the required information to parameterize the test suites referred to in the present document.

For the notation used in the tables in this clause, refer to annex A, clause A.1.

B.2 Declarations for Um air interface

The supplier of the implementation shall state the values for the implementation for each of the parameters presented in tables B.1 to B.10 according to the IUT capabilities.

B.2.1 Layer 1

Table B.1: Test mode frequency bands

Prerequisite: A.1/1 -- Um			
Item	**Frequency band**	**Minimum range (MHz)**	**Supported range**
1	Uplink RF carrier frequencies	380 to 385	
2	Downlink RF carrier frequencies	390 to 395	

B.2.2 Layer 2

B.2.2.1 MAC layer

Table B.2: MAC parameters

Prerequisite: A.4/5 -- Upper MAC				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_GSSI_1	GSSI_Type	Group identifier.	
2	PIX_GSSI_2	GSSI_Type	Group identifier.	
3	PIX_GSSI_3	GSSI_Type	Group identifier.	
4	PIX_SSI	SSI_Type	ITSI value of the MS.	
5	PIX_HOME_LA	MM_LocationAreaType	Home location area of the MS.	
6	PIX_HOME_MCC	MM_MCC_Type	Home mobile country code of the MS.	
7	PIX_HOME_MNC	MM_MCC_Type	Home mobile network code of the MS.	
8	PIX_NEW_LOCATION_AREA_1	MM_LocationAreaType	Unique registration area in the home MCC and MNC.	
9	PIX_NEW_LOCATION_AREA_2	MM_LocationAreaType	Unique registration area in the home MCC and MNC.	
10	PIX_NEW_LOCATION_AREA_3	MM_LocationAreaType	Unique registration area in the home MCC and MNC.	

B.2.3 Layer 3

B.2.3.1 CMCE

Table B.3: CC parameters

Prerequisite: A.28/1 -- CC				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_T303	INTEGER	Duration of the T303 in the IUT in seconds.	
2	PIX_T308	INTEGER	Duration of the T308 in the IUT in seconds.	
3	PIX_T311	INTEGER	Duration of the T311 in the IUT in seconds.	
4	PIX_MS_ITSI	ITSI_type	ITSI of the IUT.	

B.2.3.2 MM

Table B.4: MM parameters

Prerequisite: A.4/2 -- MM				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_COUNTRY_CODE	MCC_Type	Home country code of the IUT.	
2	PIX_NETWORK_CODE	MNC_Type	Home network code of the IUT.	
3	PIX_LOCATION_AREA	LocationAreaType	Home location area of the IUT.	
4	PIX_NEW_LOCATION_AREA	LocationAreaType	A location area outside the IUT home location area.	
5	PIX_MS_TEI	TEI_Type	TEI of the IUT, 60 bits.	
6	PIX_MS_ITSI	ITSI_type	ITSI of the IUT.	

B.2.3.3 MLE

Table B.5: MLE parameters

Prerequisite: A.4/3 -- MLE				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_CHANNEL_1	MainCarrierNoType	A channel that the IUT initially tries to camp on to.	
2	PIX_CHANNEL_2	MainCarrierNoType	Another channel that the IUT is capable of selecting.	
3	PIX_COUNTRY_CODE	MCC_Type	Home country code of the IUT.	
4	PIX_NETWORK_CODE	MNC_Type	Home network code of the IUT.	
5	PIX_LOCATION_AREA	LocationAreaType	Home location area of the IUT.	
6	PIX_NEW_LOCATION_AREA	LocationAreaType	A location area outside the IUT home location area.	
7	PIX_MS_ITSI	ITSI_type	ITSI of the IUT.	

B.2.4 Security

Table B.6: Implicit send events

Prerequisite: A.4/7 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_IMP_AUTHENTICATION_DEMAND	BOOLEAN	It is possible to cause IUT to send U-AUTHENTICATION DEMAND PDU.	
2	PIX_IMP_LOCATION_UPDATE_Type	BOOLEAN	It is possible to cause IUT to send U-LOCATION UPDATE DEMAND PDU having given location update type and ITSI.	
3	PIX_IMP_LOCATION_UPDATE_DEMAND_AuthReq	BOOLEAN	It is possible to cause IUT to send U-LOCATION UPDATE DEMAND PDU having given location update type and ITSI and containing an authentication demand.	
4	PIX_IMP_OTAR_CCK_DEMAND_Normal	BOOLEAN	It is possible to cause IUT to send U-OTAR CCK DEMAND PDU.	
5	PIX_IMP_OTAR_GCK_DEMAND_Normal	BOOLEAN	It is possible to cause IUT to send U-OTAR SCK DEMAND PDU.	
6	PIX_IMP_OTAR_SCK_DEMAND_1	BOOLEAN	It is possible to cause IUT to send U-OTAR SCK DEMAND PDU containing a request for 1 SCK.	

Table B.7: Configuration parameter values

Prerequisite: A.4/7 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_VD_L3	BOOLEAN	Configuration set to test the Voice+Data layer 3 security protocol	

Table B.8: General parameter values

Prerequisite: A.4/7 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_MS_ITSI	ITSI_Type	ITSI of the IUT	
2	PIX_TEI	TEI_Type	TEI	
3	PIX_GSSI	GSSI_Type	GSSI	

Table B.9: Authentication parameter values

Prerequisite: A.4/7 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_RAND1	RandomChallengeType	Value of Random challenge (RAND1)	
2	PIX_RS	RandomSeedType	Value of the Random seed (RS)	
3	PIX_RES2	ResponseValueType	Value of the result RES2	

Table B.10: OTAR parameter values

Prerequisite: A.4/7 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_CURRENT_CCK	CCK_IdType	Value of the CCK of the current Location area	
2	PIX_OTHER_CCK	CCK_IdType	Value of the CCK of another location area	
3	PIX_CURRENT_SCCK	SealedKeyType	Value of the sealed CCK of the current location area	
4	PIX_OTHER_SCCK	SealedKeyType	Value of the sealed CCK of another location area	
5	PIX_SCKN	SCK_NbrType	SCK number	
6	PIX_SCK_VN	SCK_VersionNbrType	SCK version number	
7	PIX_SSCK	SealedKeyType	Sealed SCK	
8	PIX_GCK_VN	GCK_VersionNbrType	GCK version number	
9	PIX_SGCK	SealedKeyType	Sealed GCK	
10	PIX_CURRENT_LA	LocationAreaType	Value of the current location area	

B.3 Declarations for Ud air interface

The supplier of the implementation shall state the values for the implementation for each of the parameters presented in tables B.11 to B.20 according to the IUT capabilities.

B.3.1 Layer 1

Table B.11: Test mode frequency bands

Prerequisite: A.1/2 -- Ud			
Item	**Frequency band**	**Frequency range (MHz) (note)**	**Supported range or specific frequencies**
1	RF carrier frequencies for transmission	380 to 385 and 390 to 395	
2	RF carrier frequencies for receiving	380 to 385 and 390 to 395	
NOTE: The frequency range to be available in test mode shall as a minimum cover frequencies within the specified range.			

B.3.2 Layer 2

Table B.12: DM-MAC Implicit send events

Prerequisite: A.63/2 -- DM-MAC for MS to MS operation				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_IMP_SYNC_SETUP	BOOLEAN	True if it is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SETUP SDU.	
2	PIX_IMP_SYNC_SETUP_PRES	BOOLEAN	True if it is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SETUP PRES SDU.	
3	PIX_IMP_SYNC_SDS_DATA	BOOLEAN	True if it is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SDS DATA SDU.	
4	PIX_IMP_SYNC_SDS_UDATA	BOOLEAN	True if it is possible to cause the IUT to send a DMAC-SYNC PDU containing a DM-SDS UDATA SDU.	

Table B.13: DM-MAC parameter values

Prerequisite: A.63/2 -- DM-MAC for MS to MS operation				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_MS_SSI	SSI_Type	SSI of the IUT	
2	PIX_TESTER_MNI	MNI_Type	MNI of the tester	
3	PIX_TESTER_SSI	SSI_Type	SSI of the tester	

B.3.3 Layer 3

Table B.14: DMCC Implicit send events

Prerequisite: A.63/1 -- DMCC for MS to MS operation				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_IMP_DM_SETUP	BOOLEAN	True if it is possible to cause the IUT to send a DM-SETUP PDU	
2	PIX_IMP_DM_SETUP_Group	BOOLEAN	True if it is possible to cause the IUT to send a DM-SETUP PDU for a group call	
3	PIX_IMP_DM_SETUP_PRES	BOOLEAN	True if it is possible to cause the IUT to send a DM-SETUP PRES PDU	
4	PIX_IMP_DM_TX_REQUEST	BOOLEAN	True if it is possible to cause the IUT to send a DM-TX REQUEST PDU.	
5	PIX_IMP_DM_RELEASE	BOOLEAN	True if it is possible to cause the IUT to send a DM-RELEASE PDU.	
6	PIX_IMP_DM_TX_CEASED	BOOLEAN	True if it is possible to cause the IUT to send a DM-TX CEASED PDU.	
7	PIX_IMP_DM_SDS_DATA	BOOLEAN	True if it is possible to cause the IUT to send a DM-SDS DATA PDU.	
8	PIX_IMP_DM_SDS_UDATA	BOOLEAN	True if it is possible to cause the IUT to send a DM-SDS UDATA PDU.	

Table B.15: DMCC parameter values

Prerequisite: A.63/1 -- DMCC for MS to MS operation				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_CIRCUIT_MODE_TYPE	Circuit_Mode_Type_Type	Traffic channel type and interleaving depth supported by the IUT.	
2	PIX_OTHER_TSI	TSI_Type	The TSI not recognized by the IUT and the tester.	
3	PIX_POWER_CLASS	Power_Class_Type	The power class of the IUT.	
4	PIX_POWER_CONTROL_FLAG	Power_Control_Flag_Type	Power control flag, which indicate whether or not power control by slave is permitted.	
5	PIX_RESERVATION_TIME	Reservation_Time_Remaining_Type	Value of the reservation time remaining used by the master MS.	
6	PIX_SDS_TIME_REMAINING	SDS_Time_Remaining_Type	Value of the SDS time remaining element used to indicate the current estimate of the SDS channel occupation time.	
7	PIX_SDS_DATA_1	User_Defined_Data_1_Type	Value of SDS data type 1.	
8	PIX_SDS_DATA_1_FCS	FCS_Type	Value of the Frame Check Sequence for the SDS DATA 1 data.	
9	PIX_SDS_DATA_2	User_Defined_Data_2_Type	Value of SDS data type 2.	
10	PIX_SDS_DATA_2_FCS	FCS_Type	Value of the Frame Check Sequence for the SDS DATA 2 data.	
11	PIX_SDS_DATA_3	User_Defined_Data_3_Type	Value of SDS data type 3.	
12	PIX_SDS_DATA_3_FCS	FCS_Type	Value of the Frame Check Sequence for the SDS DATA 3 data.	
13	PIX_SDS_DATA_4	User_Defined_Data_4_Type	Value of SDS data type 4.	
14	PIX_SDS_DATA_4_FCS	FCS_Type	Value of the Frame Check Sequence for the SDS DATA 4 data.	
15	PIX_SDS_DATA_4_LENGTH	Length_Indicator_Type	Length of the value of the SDS data type 4.	
16	PIX_SDS_CURRENTLY_TESTING	INTEGER	The type (1 to 4) of SDS data currently testing.	

B.3.4 Security

Table B.16: Implicit send events

Prerequisite: A.63/5 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_IMP_SDS_DATA_SCK_Demand	BOOLEAN	Sending of the DM SDS DATA PDU containing an OTAR SCK demand implemented.	

Table B.17: Configuration parameter values

Prerequisite: A.63/5 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_DM	BOOLEAN	Configuration set to test the Direct Mode security protocol.	

Table B.18: General parameter values

Prerequisite: A.63/5 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_MS_ITSI	ITSI_Type	ITSI of the IUT.	
2	PIX_TEI	TEI_Type	TEI.	
3	PIX_DM_SDS_TIME_REMAINING	DM_TimeRemainingType	Value of the SDS time remaining element used to indicate the current estimate of the SDS channel occupation time.	

Table B.19: Authentication parameter values

Prerequisite: A.63/5 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_RAND1	RandomChallengeType	Value of Random challenge (RAND1).	
2	PIX_RS	RandomSeedType	Value of the Random seed (RS).	
3	PIX_RES2	ResponseValueType	Value of the result RES2.	

Table B.20: OTAR parameter values

Prerequisite: A.63/5 -- Security				
Item	**Parameter**	**Parameter type**	**Explanation**	**Value or reference**
1	PIX_SCKN	SCK_NbrType	SCK number.	
2	PIX_SCK_VN	SCK_VersionNbrType	SCK version number.	
3	PIX_SSCK	SealedKeyType	Sealed SCK.	

Bibliography

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

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- Council Directive 73/23/EEC of 19 February 1973 on the harmonization of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits.
- ETR 238: "ETSI/CENELEC standardization programme for the development of Harmonized Standards related to Electro-Magnetic Compatibility (EMC) in the field of telecommunications".
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- ETS 300 396-1: "Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO); Part 1: General network design".

History

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