



SLOVENSKI STANDARD

SIST EN 300 392-5 V2.2.1:2010

01-oktober-2010

Prizemni snopovni radio (TETRA) - Govor in podatki (V+D) - 5. del: Vmesnik periferne opreme (PEI)

Terrestrial Trunked Radio (TETRA) - Voice plus Data (V+D) and Direct Mode Operation (DMO) - Part 5: Peripheral Equipment Interface (PEI)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Ta slovenski standard je istoveten z: **EN 300 392-5 Version 2.2.1**

SIST EN 300 392-5 V2.2.1:2010
<https://standards.iteh.ai/catalog/standards/sist/9b4607dc-2626-49cc-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010>

ICS:

33.070.10	Prizemni snopovni radio (TETRA)	Terrestrial Trunked Radio (TETRA)
-----------	------------------------------------	--------------------------------------

SIST EN 300 392-5 V2.2.1:2010

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 392-5 V2.2.1:2010

<https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ee-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010>

ETSI EN 300 392-5 V2.2.1 (2010-07)

European Standard (Telecommunications series)

Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D) and Direct Mode Operation (DMO); Part 5: Peripheral Equipment Interface (PEI)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 392-5 V2.2.1:2010](https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ee-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010)

<https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ee-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010>



Reference

REN/TETRA-04176

Keywords

data, interface, TETRA, V+D, voice**ETSI**

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 392-5 V2.2.1:2010

<https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ee-981b-953d88bb5f2c/etsi-en-300-392-5-v2-2-1-2010>
Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2010.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™**, **TIPHON™**, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

LTE™ is a Trade Mark of ETSI currently being registered

for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	19
Foreword.....	19
Introduction	20
1 Scope	21
2 References	21
2.1 Normative references	21
2.2 Informative references	23
3 Symbols and abbreviations.....	23
3.1 Symbols.....	23
3.2 Abbreviations	24
4 Overview of TETRA PEI	26
4.1 Introduction	26
4.2 Protocol architecture.....	27
4.3 Context model	27
4.4 Void.....	30
4.5 SDS Message stacks.....	30
4.5.1 Status message texts.....	30
4.5.2 SDS 1 message texts	30
4.5.3 Status and SDS types 1, 2 and 3	30
4.5.4 SDS type 4	31
4.6 Phone books	31
4.7 Reserved status values considerations.....	31
4.8 SDS-TL considerations	31
4.9 AT commands	32
4.9.1 General on AT commands.....	32
4.9.2 AT command state	34
4.9.3 AT circuit mode data state	34
4.9.4 TNP1 and packet data state.....	35
4.9.5 Transitions between states	35
4.9.5.1 Transition from AT command state to AT circuit mode data state	35
4.9.5.2 Transition from AT circuit mode data state to AT command state	35
4.9.5.3 Transition from AT command state to TNP1 or packet data state	36
4.9.5.4 Transition from TNP1 and packet data state to AT command state.....	36
4.10 TNP1 and IP network layer	36
4.10.1 General operation.....	36
4.10.2 IP addressing.....	36
4.10.3 Local mode	37
4.10.4 Wide mode.....	37
4.11 TNP1 operation	37
4.12 Link start up at the MT.....	38
5 Physical layer	38
5.1 General on physical layer	38
5.2 Physical layer for V.24/V.28	39
5.2.1 Electrical characteristics for V.24/V.28.....	39
5.2.2 Physical connection	39
5.2.3 Character format	40
5.2.4 Data transmission rate for V.24/V.28	40
5.3 Wire-line high rate connectivity technologies	40
5.3.1 General.....	40
5.3.2 Universal Serial Bus	41
5.3.3 USB On-The-Go.....	42
5.4 Wireless high rate connectivity	42
5.4.1 General.....	42

5.4.2	Wireless Security	42
5.4.3	Certified Wireless USB	43
5.4.4	Bluetooth	43
6	AT command set	43
6.1	General on AT command set	43
6.2	Limitations	44
6.3	SDS user data	44
6.4	AT command syntax	45
6.4.1	General on AT command syntax	45
6.4.2	Command line	45
6.4.2.1	Prefix	45
6.4.2.2	Body	45
6.4.2.3	Termination Character	45
6.4.2.4	Concatenating extended commands	45
6.4.3	Command Types	45
6.4.4	Parameters	46
6.4.5	Examples	46
6.4.6	Information responses and result codes	46
6.4.6.1	General on information responses and result codes	46
6.4.6.2	Information Responses	47
6.4.6.3	Result Code	47
6.4.6.4	Examples	47
6.4.7	Handling of unknown parameters	48
6.5	Existing V.250 commands for call control	48
6.5.1	Commands	48
6.5.2	Result Codes	49
6.5.3	Dialled string and user identity	49
6.6	Existing V.250 commands for PEI control	50
6.7	Existing V.250 commands for generic MT control	50
6.8	Existing Hayes AT commands for PEI control	51
6.9	Existing GSM commands for MT control	51
6.10	Modified PCCA wireless extended commands	52
6.11	Modified Cellular commands for MT control	52
6.11.1	General on cellular commands for MT control	52
6.11.2	MT Capabilities +GCAP	52
6.11.2.1	General on +GCAP	52
6.11.2.2	Description	52
6.11.2.3	GCAP Read and Unsolicited Result Code Text	52
6.11.3	Network registration +CREG	53
6.11.3.1	General on +CREG	53
6.11.3.2	CREG Set Syntax	53
6.11.3.3	Description	53
6.11.3.4	CREG Read and Unsolicited Result Code Text	53
6.11.4	Get MT TETRA identities +CNUM	53
6.11.4.1	General on +CNUM	53
6.11.4.2	Description	53
6.11.4.3	CNUM Read Result Code Text	53
6.11.5	Get MT TETRA Identities (alternative commands)	54
6.11.5.1	Get MT TETRA Fixed identity number(s): ITSI, and Gateway address(es) +CNUMF	54
6.11.5.1.1	General on +CNUMF	54
6.11.5.1.2	Description	54
6.11.5.1.3	CNUMF Read Result Code Text	54
6.11.5.2	Get MT static group identities +CNUMS	54
6.11.5.2.1	General on +CNUMS	54
6.11.5.2.2	Description	54
6.11.5.2.3	CNUMS Set Syntax	55
6.11.5.2.4	CNUMS Read and Unsolicited Result Code Text	55
6.11.5.3	Get MT dynamic group identities +CNUMD	55
6.11.5.3.1	General on +CNUMD	55
6.11.5.3.2	Description	55
6.11.5.3.3	CNUMD Set Syntax	55

6.11.5.3.4	CNUMD Read and Unsolicited Result Code Text	55
6.12	Modified GSM SDS message stack commands	56
6.12.1	General on Modified GSM SDS message stack commands	56
6.12.2	Delete message +CMGD	56
6.12.2.1	General on +CMGD	56
6.12.2.2	CMGD Set Syntax	56
6.12.2.3	Description	56
6.12.3	List messages +CMGL	56
6.12.3.1	General on +CMGL	56
6.12.3.2	CMGL Set Syntax	56
6.12.3.3	Description	57
6.12.3.4	CMGL Set Result Code Text	57
6.12.4	Read message +CMGR	57
6.12.4.1	General on +CMGR	57
6.12.4.2	CMGR Set Syntax	57
6.12.4.3	Description	57
6.12.4.4	CMGR Set and unsolicited Result Codes	57
6.12.5	Write message +CMGW	58
6.12.5.1	General on +CMGW	58
6.12.5.2	CMGW Set Syntax	58
6.12.5.3	Description	58
6.12.5.4	CMGW Set Result Codes	58
6.12.6	Message send from store +CMSS	59
6.12.6.1	General on +CMSS	59
6.12.6.2	CMSS Set Syntax	59
6.12.6.3	Description	59
6.12.6.4	CMSS Set Result Codes	59
6.12.7	New message indication +CMTI	59
6.12.7.1	General on +CMTI	59
6.12.7.2	Description	59
6.12.7.3	CMTI Unsolicited Result Code Text	60
6.13	Modified GSM SDS direct commands	60
6.13.1	General on GSM SDS direct commands	60
6.13.2	Send message +CMGS	60
6.13.2.1	General on +CMGS	60
6.13.2.2	CMGS Set Syntax	60
6.13.2.3	Description	60
6.13.2.4	CMGS Set and Unsolicited Result Code Text	60
6.13.3	TETRA SDS Receive +CTSDSR	61
6.13.3.1	General on +CTSDSR	61
6.13.3.2	Description	61
6.13.3.3	CTSDSR unsolicited Result Codes	61
6.14	TETRA MT control commands	61
6.14.1	General on TETRA MT control commands	61
6.14.2	TETRA Broadcast +CTBCT	61
6.14.2.1	General on +CTBCT	61
6.14.2.2	Description	61
6.14.2.3	CTBCT Result Code text	61
6.14.3	TETRA Status Text Read +CTSTR	62
6.14.3.1	General on +CTSTR	62
6.14.3.2	CTSTR Set Syntax	62
6.14.3.3	Description	62
6.14.3.4	CTSTR Read Result Code text	62
6.14.4	TETRA Service Profile +CTSP	62
6.14.4.1	General on +CTSP	62
6.14.4.2	CTSP Set Syntax	62
6.14.4.3	Description	62
6.14.4.4	CTSP Read Result Code text	64
6.14.5	TETRA service definition for Circuit Mode services +CTSDC	64
6.14.5.1	General on +CTSDC	64
6.14.5.2	CTSDC Set Syntax	64
6.14.5.3	Description	65

6.14.5.4	CTSDC Read Result Code text	65
6.14.6	TETRA service definition for SDS Service +CTSDS	65
6.14.6.1	General on +CTSDS	65
6.14.6.2	CTSDS Set Syntax	65
6.14.6.3	Description	65
6.14.6.4	CTSDS Read Result Code text.....	66
6.14.7	TETRA operating mode +CTOM.....	66
6.14.7.1	General on +CTOM	66
6.14.7.2	CTOM Set Syntax	66
6.14.7.3	Description	66
6.14.7.4	CTOM Read and Unsolicited Result Code text	66
6.14.8	TETRA DM communication type +CTDCT	67
6.14.8.1	General on +CTDCT	67
6.14.8.2	CTDCT Set Syntax	67
6.14.8.3	Description	67
6.14.8.4	CTDCT Read and Unsolicited Result Code text.....	67
6.14.9	TETRA Transient communication type +CTTCT	67
6.14.9.1	General on +CTTCT	67
6.14.9.2	CTTCT Set Syntax	67
6.14.9.3	Description	67
6.14.9.4	CTTCT Unsolicited Result Code Text.....	67
6.14.10	TETRA DMO visible gateways/repeaters +CTDGR.....	68
6.14.10.1	General on +CTDGR	68
6.14.10.2	CTDGR Set Syntax	68
6.14.10.3	Description	68
6.14.10.4	CTDGR Read and Unsolicited Result Code text	68
6.14.11	TETRA DM Carrier Selection +CTDCS	68
6.14.11.1	General on +CTDCS	68
6.14.11.2	CTDCS Set Syntax.....	68
6.14.11.3	Description	68
6.14.11.4	CTDCS Read and Unsolicited Result Code text	69
6.14.12	MT Reboot ATR.....	69
6.14.12.1	General on MT Reboot ATR.....	69
6.14.12.2	Description	69
6.14.12.3	ATR execution syntax.....	69
6.15	New TETRA call handling commands.....	69
6.15.1	General on new TETRA call handling commands	69
6.15.2	TETRA Call Connect +CTCC	69
6.15.2.1	General on +CTCC	69
6.15.2.2	Description	70
6.15.2.3	CTCC Unsolicited Result Code Text	70
6.15.3	TETRA Call Release +CTCR.....	70
6.15.3.1	General on +CTCR	70
6.15.3.2	Description	70
6.15.3.3	CTCR Unsolicited Result Code Text	70
6.15.4	TETRA Incoming Call Notification +CTICN	70
6.15.4.1	General on +CTICN.....	70
6.15.4.2	Description	70
6.15.4.3	CTICN Unsolicited Result Code Text.....	71
6.15.5	TETRA outgoing Call progress notification +CTOCP	71
6.15.5.1	General on +CTOCP	71
6.15.5.2	Description	71
6.15.5.3	CTOCP Unsolicited Result Code Text.....	71
6.15.6	TETRA Group Set up +CTGS.....	71
6.15.6.1	General on +CTGS.....	71
6.15.6.2	CTGS Set Syntax	72
6.15.6.3	Description	72
6.15.6.4	CTGS Read and unsolicited Result Code text.....	72
6.15.7	TETRA SDS Receive +CTSDSR	72
6.15.8	Transmit Demand +CTXD	72
6.15.8.1	General on +CTXD	72
6.15.8.2	CTXD Set Syntax.....	72

6.15.8.3	Description	72
6.15.9	Up Transmit Ceased +CUTXC	73
6.15.9.1	General +CUTXC	73
6.15.9.2	CUTXC Set Syntax	73
6.15.9.3	Description	73
6.15.10	Transmission Grant +CTXG	73
6.15.10.1	General on +CTXG	73
6.15.10.2	Description	73
6.15.10.3	CTXG Unsolicited Result Code Text	73
6.15.11	Down Transmission Ceased +CDTXC	73
6.15.11.1	General on +CDTXC	73
6.15.11.2	Description	73
6.15.11.3	CDTXC Unsolicited Result Code Text	74
6.15.12	Transmission Continue +CTXN	74
6.15.12.1	General on +CTXN	74
6.15.12.2	Description	74
6.15.12.3	CTXN Unsolicited Result Code Text	74
6.15.13	Transmission Interrupt +CTXI	74
6.15.13.1	General on +CTXI	74
6.15.13.2	Description	74
6.15.13.3	CTXI Unsolicited Result Code Text	74
6.15.14	Transmission Wait +CTXW	74
6.15.14.1	General on +CTXW	74
6.15.14.2	Description	74
6.15.14.3	CTXW Unsolicited Result Code Text	74
6.15.15	Key Status +CTKST	75
6.15.15.1	General on +CTKST	75
6.15.15.2	CTKST Set Syntax	75
6.15.15.3	Description	75
6.16	MT errors	75
6.16.1	General on MT errors	75
6.16.2	Report MT error +CMEE	75
6.16.2.1	General on +CMEE	75
6.16.2.2	CMEE Set Syntax	76
6.16.2.3	Description	76
6.16.2.4	CMEE Set Result Code Text	76
6.16.3	MT error result code +CME ERROR	76
6.16.3.1	General on +CME ERROR	76
6.16.3.2	Description	76
6.16.3.3	CME ERROR Unsolicited Result Code Text	76
6.16.4	MT result code +CME PARAMETER	76
6.16.4.1	General on +CME PARAMETER	76
6.16.4.2	Description	76
6.16.4.3	CME PARAMETER Unsolicited Result Code Text	76
6.17	Parameter description and values	77
6.17.1	General on parameters	77
6.17.2	Access Priority	77
6.17.3	AI Service	77
6.17.4	AI mode	78
6.17.5	Alpha	78
6.17.5a	Ancillary ID	78
6.17.6	Area	78
6.17.7	BS service	79
6.17.8	Call status	79
6.17.9	Called party identity	80
6.17.10	Calling party identity	80
6.17.11	Called party identity type	80
6.17.12	Calling party identity type	80
6.17.13	CC instance	80
6.17.14	Class of MS	81
6.17.15	CLIR control	83
6.17.16	Comms type	84

ITH STANDARD PREVIEW
 (standards.iteh.ai)

6.17.17	CT unsolic.....	84
6.17.18	Disconnect cause	84
6.17.19	DM carrier	85
6.17.20	DM communication type	85
6.17.21	End to End encryption	86
6.17.22	Extended error report.....	86
6.17.23	Extended error report codes	86
6.17.24	Gateway/repeater address	87
6.17.25	Group type	87
6.17.26	GR unsolic	88
6.17.27	Hook	88
6.17.28	Ident unsolic.....	88
6.17.29	Importance factor.....	88
6.17.29a	Key name	88
6.17.29b	Key status	89
6.17.30	LA.....	89
6.17.31	Length.....	89
6.17.32	Link identifier	89
6.17.33	Lower range Limit	89
6.17.34	Message index	90
6.17.35	Message reference.....	90
6.17.36	MNI	90
6.17.37	Number of groups	90
6.17.38	Num type	90
6.17.39	Parameter number	90
6.17.40	PID.....	91
6.17.41	Presence information.....	91
6.17.42	Priority	91
6.17.43	Priority level	92
6.17.44	Proprietary	92
6.17.45	Proprietary element owner.....	92
6.17.46	Reg stat	92
6.17.47	Reg unsolic	92
6.17.48	RqTx	93
6.17.49	SDS instance	93
6.17.50	SDS-TL addressing.....	93
6.17.51	SDS Status	93
6.17.52	Security information	93
6.17.53	Service profile.....	94
6.17.54	Service layer1	94
6.17.55	Service layer2	94
6.17.56	Serviced GSSI.....	95
6.17.57	Simplex.....	95
6.17.58	Slots/Codec	95
6.17.59	Stack full.....	95
6.17.60	Stack present.....	96
6.17.61	TPI (Transmitting Party Identity)	96
6.17.62	TPI (Transmitting Party Identity) type.....	96
6.17.63	Transient communication type.....	96
6.17.64	TxCont	96
6.17.65	TxDemandPriority	96
6.17.66	TxGrant.....	97
6.17.67	TxRqPrmsn	97
6.17.68	Upper range limit.....	97
6.17.69	User data	97
6.18	Outgoing call set up methodology.....	97
6.18.1	General on outgoing call set up methodology.....	97
6.18.2	Voice calls	97
6.18.3	Circuit mode data calls	98
6.18.4	Sending of SDS messages.....	99
6.18.4.1	General on sending of SDS messages	99
6.18.4.2	Send via Stack.....	99

SIST EN 300 392-5 V2.2.1:2010

[https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ce-981b-](https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ce-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010)

[953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010](https://standards.iteh.ai/catalog/standards/sist/9b4b07dc-2b2b-49ce-981b-953d88bb5f2e/sist-en-300-392-5-v2-2-1-2010)

6.18.4.3	Direct Send.....	99
6.19	Incoming call set up methodology	99
6.19.1	General on incoming call set up methodology.....	99
6.19.2	Voice calls	100
6.19.3	Circuit mode data calls	100
6.19.4	Reception of SDS messages.....	100
6.19.4.1	Received via Stack	100
6.19.4.2	Direct Received.....	100
6.20	Voice and circuit mode data call maintenance commands	100
6.21	Call clear down commands	101
6.21.1	General on call clear down commands	101
6.21.2	TE Initiated clear	101
6.21.3	Network and MT Initiated clear.....	101
6.22	MEX layer support.....	101
6.22.1	MEX Capability +CTMCAP	101
6.22.1.1	General on +CTMCAP	101
6.22.1.2	CTMCAP Read Syntax	101
6.22.1.3	CTMCAP Response Syntax	102
6.22.2	MEX Connect +CTMCON.....	102
6.22.2.1	General on +CTMCON.....	102
6.22.2.2	CTMCON Set Syntax	102
6.22.2.3	CTMCON Result Code Syntax	102
6.22.3	MEX End +CTMEND	102
6.22.3.1	General on +CTMEND	102
6.22.3.2	CTMEND Set Syntax.....	102
6.22.3.3	CTMEND Response and Unsolicited Result Code Syntax	102
6.22.4	MEX Handle +CTMHDL MEX Handle.....	102
6.22.4.1	General on +CTMHDL.....	102
6.22.4.2	CTMHDL Set Syntax.....	102
6.22.4.3	CTMHDL Response Syntax.....	103
6.22.5	MEX Modify +CTMMOD	103
6.22.5.1	General on +CTMMOD	103
6.22.5.2	CTMMOD Set Syntax.....	103
6.22.5.3	CTMMOD Result Code Syntax.....	103
6.22.5.4	CTMMOD Unsolicited Report Syntax.....	103
6.22.6	MEX QOS Class +CTMQC	103
6.22.6.1	General on +CTMQC.....	103
6.22.6.2	CTMQC Set/Read Syntax	103
6.22.6.3	CTMQC Response Syntax	103
6.22.7	Request New Logical PEI Connection +CTPCON.....	103
6.22.7.1	General on +CTPCON	103
6.22.7.2	CTPCON Set Syntax.....	104
6.22.7.3	CTPCON Response Syntax.....	104
6.22.8	MEX related Parameters	104
6.22.8.1	CONTEXT_READY timer	104
6.22.8.2	Data Class	104
6.22.8.3	Data Importance	105
6.22.8.4	Data Priority	105
6.22.8.5	DCOMP	105
6.22.8.6	Delay Class	105
6.22.8.7	Device address	105
6.22.8.8	Endpoint address	105
6.22.8.9	Maximum Transmission Unit.....	106
6.22.8.10	Mean Active Throughput	106
6.22.8.11	Mean Throughput.....	106
6.22.8.12	MEX Capability	107
6.22.8.13	MEX Connect Reject Cause.....	107
6.22.8.14	MEX Connect Report.....	108
6.22.8.15	MEX Data Importance	108
6.22.8.16	MEX Data Priority	108
6.22.8.17	MEX Deactivation Type	109
6.22.8.18	MEX Escalate DSCP5 Flag Enable.....	109

6.22.8.19	MEX Escalate DSCP5 Flag Reset.....	109
6.22.8.20	MEX Filter	109
6.22.8.21	MEX Filter Operation	109
6.22.8.22	MEX Filter Type	109
6.22.8.23	MEX Handle	110
6.22.8.24	MEX Mode	110
6.22.8.25	MEX Modify Reject Cause	110
6.22.8.26	MEX Modify Report	110
6.22.8.27	MEX NSAPI Usage	111
6.22.8.28	MEX PDP Address	111
6.22.8.29	MEX PDP Type	111
6.22.8.30	MEX PDU Priority Max	111
6.22.8.31	MEX Precedence.....	112
6.22.8.32	MEX precedence rank.....	112
6.22.8.33	MEX precedence supported	112
6.22.8.34	MEX Peer IP Filter.....	112
6.22.8.35	MEX QoS.....	112
6.22.8.36	MEX QoS Class	112
6.22.8.37	MEX QoS Class Access.....	112
6.22.8.38	MEX QoS Class Upper/Lower (Downlink).....	113
6.22.8.39	MEX QoS Class Upper/Lower (Uplink).....	113
6.22.8.40	MEX QoS Filter	113
6.22.8.41	MEX Transaction Type.....	113
6.22.8.42	Minimum Peak Throughput	113
6.22.8.43	Mobile IPv4 Information.....	114
6.22.8.44	NSAPI.....	114
6.22.8.45	NSAPI Data Priority	114
6.22.8.46	NSAPI QoS Negotiation	114
6.22.8.47	PCOMP	114
6.22.8.48	PCON result	115
6.22.8.49	PDU Priority	115
6.22.8.50	PDU Priority Max	115
6.22.8.51	Reliability Class	115
6.22.8.52	Schedule availability	115
6.22.8.53	Scheduled access	115
6.22.8.54	Scheduled Number of N-PDU's per grant	116
6.22.8.55	Scheduled N-PDU size.....	116
6.22.8.56	Schedule Repetition Period.....	116
6.22.8.57	Schedule Timing Error.....	116
6.22.8.58	Share response flag	117
7	TNP1 service description	117
7.1	Service primitives at the TNP1A-SAP	117
7.2	Service primitives at the TNP1B-SAP	117
7.3	Service primitives at TNP1A-SAP and TNP1B-SAP	117
7.4	Primitive descriptions.....	118
7.4.1	TNP1-Services CAPABILITY	118
7.4.2	TNP1-SDS-TL CAPABILITY	118
7.4.3	TNP1-IDENTIFICATION.....	118
7.4.4	TNP1-IDENTITIES.....	119
7.4.5	TNP1-REPORT	119
7.4.6	TNP1-SERVICE ACCESS.....	120
7.4.7	TNP1-SERVICE PROFILES.....	120
7.4.7.1	General on TNP1 service profiles	120
7.4.7.2	TNP1-SDS SERVICE PROFILE.....	120
7.4.7.3	TNP1-CC SERVICE PROFILE.....	121
7.4.7.4	TNP1-MM SERVICE PROFILE	121
7.4.7.5	TNP1-SDS-TL SERVICE PROFILE.....	121
7.4.8	TNP1-STATE.....	122
7.4.9	TNP1-UNITDATA.....	122
7.4.10	Mapping of TNP1 PDUs and MT2 service primitives.....	123
7.5	Parameter description	124

7.6	Service states for TNPIA-SAP	124
7.7	Service states for TNPIB-SAP	125
8	TNP1 protocol	125
8.1	Procedures	125
8.1.1	Establishing communication between TE2 user applications and MT2	125
8.1.2	Closing the TNP1 communication	125
8.1.3	Reporting normal and abnormal events	125
8.1.4	Querying MT2 identification information	125
8.1.5	Querying MT2 capabilities	126
8.1.6	Querying MT2 state	126
8.1.7	Setting/getting the service profile	126
8.1.8	Accessing CMCE and MM services	127
8.1.9	Circuit mode data	128
8.1.10	Requesting a new PEI connection	128
8.2	Protocol timers	129
8.3	PDU structure	129
8.3.1	General on PDU structure	129
8.3.2	Structure and encoding of type 1 elements	131
8.3.3	Structure and encoding of type 2 elements	131
8.3.4	Structure and encoding of type 3 elements	131
8.3.5	Examples of PDU encoding	132
8.4	TNP1 PDU descriptions	133
8.4.1	General on TNP1 PDU descriptions	133
8.4.2	PDU's relating to CC	133
8.4.2.1	TECC-ALERT IND	133
8.4.2.2	TECC-COMplete CON	134
8.4.2.3	TECC-COMplete IND	134
8.4.2.4	TECC-COMplete REQ	134
8.4.2.5	TECC-DTMF IND	135
8.4.2.6	TECC-DTMF REQ	135
8.4.2.7	TECC-MODIFY IND	135
8.4.2.8	TECC-MODIFY REQ	136
8.4.2.9	TECC-NOTIFY IND	136
8.4.2.10	TECC-PROCEED IND	137
8.4.2.11	TECC-RELEASE CON	137
8.4.2.12	TECC-RELEASE IND	137
8.4.2.13	TECC-RELEASE REQ	138
8.4.2.14	TECC-SETUP CON	138
8.4.2.15	TECC-SETUP IND	139
8.4.2.16	TECC-SETUP REQ	140
8.4.2.17	TECC-SETUP RES	140
8.4.2.18	TECC-TX CON	141
8.4.2.19	TECC-TX IND	141
8.4.2.20	TECC-TX REQ	142
8.4.3	PDU's relating to circuit mode data	142
8.4.3.1	TEMAC-FLOW CONTROL PDU	142
8.4.3.2	TEMAC-UNITDATA	142
8.4.4	PDU's relating to MM	142
8.4.4.1	General on MM PDU's	142
8.4.4.2	TEMM-ATTACH DETACH GROUP IDENTITY CON	143
8.4.4.3	TEMM-ATTACH DETACH GROUP IDENTITY IND	143
8.4.4.4	TEMM-ATTACH DETACH GROUP IDENTITY REQ	143
8.4.4.5	TEMM-DISABLING IND	144
8.4.4.6	TEMM-DEREGISTRATION REQ	144
8.4.4.7	TEMM-ENABLING IND	144
8.4.4.8	TEMM-ENERGY SAVING CON	144
8.4.4.9	TEMM-ENERGY SAVING IND	145
8.4.4.10	TEMM-ENERGY SAVING REQ	145
8.4.4.11	TEMM-REPORT IND	145
8.4.4.12	TEMM-REGISTRATION CON	146
8.4.4.13	TEMM-REGISTRATION IND	146

8.4.4.14	TEMM-REGISTRATION REQ	147
8.4.4.15	TEMM-SERVICE IND.....	147
8.4.4.16	TEMM-SERVICE REQ.....	147
8.4.4.17	TEMM-STATUS IND	148
8.4.4.18	TEMM-STATUS CON.....	148
8.4.4.19	TEMM-STATUS REQ	148
8.4.5	MT Application PDUs.....	149
8.4.5.1	TEMTA-SERVICES CAPABILITY RESP.....	149
8.4.5.2	TEMTA-SDS-TL CAPABILITY RESP.....	149
8.4.5.3	TEMTA-SERVICES CAPABILITY REQ.....	149
8.4.5.4	TEMTA-SDS-TL CAPABILITY REQ.....	150
8.4.5.5	TEMTA-IDENTITIES RES.....	150
8.4.5.6	TEMTA- IDENTITIES REQ.....	150
8.4.5.7	TEMTA-SETVOLUME REQ.....	150
8.4.5.8	TEMTA-SPEAKER-MIC REQ.....	151
8.4.5.9	TEMTA-SYSINFO RESP	151
8.4.5.10	TEMTA-SYSINFO REQ.....	151
8.4.5.11	TEMTA-IDENTIFICATION RES	151
8.4.5.12	TEMTA-IDENTIFICATION REQ.....	152
8.4.5.13	TEMTA-SDS STACK MESSAGES	152
8.4.5.13.1	General on TEMA-SDS stack messages	152
8.4.5.13.2	TEMTA-SDS DELETE MESSAGES.....	153
8.4.5.13.3	TEMTA-SDS MESSAGE ERROR.....	153
8.4.5.13.4	TEMTA-SDS MESSAGES IND.....	153
8.4.5.13.5	TEMTA-SDS MESSAGE REQ.....	154
8.4.5.13.6	TEMTA-SDS GET LIST BY KEY MESSAGES	154
8.4.5.13.7	TEMTA-SDS LIST MESSAGES REPLY.....	154
8.4.5.13.8	TEMTA-SDS NOTIFICATION.....	155
8.4.5.14	TEMTA-XXX SERVICE PROFILE RES.....	155
8.4.5.15	TEMTA-XXX SERVICE PROFILE REQ	156
8.4.5.16	TEMTA-XXX SERVICE PROFILE SET	157
8.4.5.17	TEMTA-STATE RES.....	158
8.4.5.18	TEMTA-STATE REQ.....	158
8.4.5.19	TEMTA-REPORT IND.....	158
8.4.5.20	TEMTA-NEW-PCON REQ.....	158
8.4.5.21	TEMTA-NEW-PCON CON	159
8.4.6	PDUs relating to SDS	159
8.4.6.1	General on SDS PDUs.....	159
8.4.6.2	TESDS-REPORT IND.....	159
8.4.6.3	TESDS-STATUS IND.....	160
8.4.6.4	TESDS-STATUS REQ.....	160
8.4.6.5	TESDS-UNITDATA IND	161
8.4.6.6	TESDS-UNITDATA REQ.....	162
8.4.7	PDUs relating to SDS-TL.....	162
8.4.7.1	TESDS-TL-ACK IND	162
8.4.7.2	TESDS-TL-ACK REQ.....	163
8.4.7.3	TESDS-TL-REPORT IND.....	164
8.4.7.4	TESDS-TL-REPORT REQ.....	165
8.4.7.5	TESDS-TL-TRANSFER IND.....	166
8.4.7.6	TESDS-TL-TRANSFER REQ.....	167
8.4.7.7	TESDS-TL-TNSDS-REPORT IND.....	168
8.4.7.8	TESDS-TL-UNITDATA IND	168
8.4.7.9	TESDS-TL-UNITDATA REQ	169
8.4.8	PDUs relating to SS	169
8.4.8.1	TESS-FACILITY CON	169
8.4.8.2	TESS-FACILITY IND.....	169
8.4.8.3	TESS-FACILITY REQ.....	170
8.4.8.4	TESS-FACILITY RES.....	170
8.4.9	PDUs relating to MEX.....	170
8.4.9.1	TEMX-CAPABILITY REQ	170
8.4.9.2	TEMX-CAPABILITY CON.....	170
8.4.9.3	TEMX-CONNECT REQ	171

8.4.9.4	TEMX-CONNECT CON	172
8.4.9.5	TEMX-BYPASS DATA REQ	172
8.4.9.6	TEMX-BYPASS DATA IND	173
8.4.9.7	TEMX-DELIVERY_IND	173
8.4.9.8	TEMX-END REQ	173
8.4.9.9	TEMX-END CON	174
8.4.9.10	TEMX-END IND	174
8.4.9.11	TEMX-HANDLE REQ	174
8.4.9.12	TEMX-HANDLE CON	174
8.4.9.13	TEMX-MODIFY REQ	175
8.4.9.14	TEMX-MODIFY CON	175
8.4.9.15	TEMX-MODIFY IND	176
8.4.9.16	TEMX-QOSCLASS REQ	176
8.4.9.17	TEMX-QOSCLASS CON	176
8.5	Information elements coding	177
8.5.1	General on information element coding	177
8.5.2	Access Priority (AP)	177
8.5.3	Acknowledgement required	177
8.5.4	Address extension	177
8.5.5	Area Selection (AS)	178
8.5.6	Attach detach request status	178
8.5.7	Basic service information	179
8.5.8	Battery charge	179
8.5.9	Bit error ratio	180
8.5.10	BS service details	180
8.5.11	Call amalgamation	181
8.5.12	Call handle	181
8.5.13	Called party extension	181
8.5.14	Called party self address type	181
8.5.15	Called party short number address (SNA)	182
8.5.16	Called party Short Subscriber Identity (SSI)	182
8.5.17	Called party type identifier	182
8.5.18	Calling party extension	182
8.5.19	Calling party Short Subscriber Identity (SSI)	182
8.5.20	Calling party type identifier	183
8.5.21	Call ownership	183
8.5.22	Call priority	183
8.5.23	Call queued	183
8.5.24	Call status	184
8.5.25	Call time-out	184
8.5.26	Call time-out, set-up phase	184
8.5.27	CC profile	185
8.5.28	Circuit mode and MS services	185
8.5.29	Circuit mode data	186
8.5.30	Class of usage	186
8.5.31	CLIR control	187
8.5.32	CONTEXT_READY timer	187
8.5.33	Data class	187
8.5.34	Data handle	188
8.5.35	Data importance	188
8.5.36	Data priority	188
8.5.37	DCOMP	188
8.5.38	Delay class	189
8.5.39	Delivery report request	189
8.5.40	Delivery status	189
8.5.41	Device address	191
8.5.42	Direct mode	191
8.5.43	Disconnect type	191
8.5.44	DTMF result	191
8.5.45	Disconnect cause	192
8.5.46	Disconnect status	192
8.5.47	DTMF digits	193