



European Standard

**Digital Enhanced Cordless Telecommunications (DECT);
Common Interface (CI);
Part 5: Network (NWK) layer**

*iTeh STANDARDS PREVIEW
(standards.iteh.ai)
Full standard available at: <https://standards.iteh.ai/catalog/standards/sis/46517251-2013-04/40b9-b951-687c5125846/etsi-en-300-175-5-v2-5-0>
d6-12af-2013-08*

Reference

REN/DECT-000268-5

Keywords

DECT, IMT-2000, mobility, radio, TDD, TDMA

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

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 2013.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** are Trade Marks of ETSI 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	16
Foreword.....	16
1 Scope	17
2 References	18
2.1 Normative references	18
2.2 Informative references.....	22
3 Definitions, symbols and abbreviations	23
3.1 Definitions.....	23
3.2 Symbols and abbreviations.....	23
4 Overview of the NWK layer	27
5 Overview of procedures	29
5.1 General	29
5.2 Overview of Call Control (CC).....	29
5.2.1 General.....	29
5.2.2 Call establishment.....	30
5.2.2.1 Call setup	30
5.2.2.2 Service negotiation.....	30
5.2.3 Call connect	30
5.2.4 Call information.....	31
5.2.5 Service change	31
5.2.6 Call release.....	31
5.3 Overview of Supplementary Services (SS)	31
5.3.1 General.....	31
5.3.2 Keypad protocol.....	32
5.3.3 Feature key management protocol	32
5.3.4 Functional protocol.....	32
5.4 Overview of Connection Oriented Message Service (COMS).....	33
5.4.1 General.....	33
5.4.2 COMS establishment	33
5.4.3 Service negotiation	33
5.4.4 COMS connect.....	33
5.4.5 COMS data transfer	33
5.4.6 COMS suspend and resume	34
5.4.7 COMS release	34
5.5 Overview of ConnectionLess Message Service (CLMS)	34
5.5.1 Fixed length message service.....	34
5.5.2 Variable length message service.....	34
5.6 Overview of Mobility Management (MM)	35
5.6.1 General.....	35
5.6.2 Identity procedures	35
5.6.3 Authentication procedures	35
5.6.4 Location procedures.....	36
5.6.5 Access rights procedures	36
5.6.6 Key allocation procedure	37
5.6.7 Parameter retrieval procedure	37
5.6.8 Cipherring related procedure.....	37
5.6.9 External protocol information procedure.....	37
5.7 Overview of Link Control Entity (LCE)	37
5.7.1 General.....	37
5.7.2 Data Link Endpoint Identifier (DLEI)	38
5.7.3 Data link establishment.....	38
5.7.4 Data link re-establishment	38
5.7.5 Data link release	39

5.7.6	Data link suspend and resume.....	39
5.7.7	Queuing of messages	39
5.7.8	Request paging.....	39
6	Message functional definitions.....	40
6.1	Overview of message structures	40
6.1.1	Messages.....	40
6.1.2	Information elements	40
6.2	Message summaries.....	41
6.2.1	Summary of CC messages	41
6.2.2	Summary of CISS messages	41
6.2.3	Summary of COMS messages	42
6.2.4	Summary of CLMS messages.....	42
6.2.5	Summary of MM messages	43
6.2.6	Summary of LCE messages.....	43
6.3	S-FORMAT message functional contents.....	44
6.3.1	S-FORMAT message overview.....	44
6.3.2	CC-messages.....	44
6.3.2.1	{CC-SETUP}.....	44
6.3.2.2	{CC-INFO}.....	46
6.3.2.3	{CC-SETUP-ACK}.....	47
6.3.2.4	{CC-CALL-PROC}.....	48
6.3.2.5	{CC-ALERTING}.....	49
6.3.2.6	{CC-CONNECT}.....	50
6.3.2.7	{CC-CONNECT-ACK}.....	51
6.3.2.8	{CC-RELEASE}.....	51
6.3.2.9	{CC-RELEASE-COM}.....	53
6.3.2.10	{CC-SERVICE-CHANGE}.....	54
6.3.2.11	{CC-SERVICE-ACCEPT}.....	55
6.3.2.12	{CC-SERVICE-REJECT}.....	55
6.3.2.13	{CC-NOTIFY}.....	56
6.3.2.14	{IWU-INFO}.....	56
6.3.3	SS-messages (call related and call independent).....	57
6.3.3.1	{FACILITY}.....	57
6.3.3.2	{HOLD}.....	58
6.3.3.3	{HOLD-ACK}.....	58
6.3.3.4	{HOLD-REJECT}.....	59
6.3.3.5	{RETRIEVE}.....	59
6.3.3.6	{RETRIEVE-ACK}.....	60
6.3.3.7	{RETRIEVE-REJECT}.....	60
6.3.3.8	{CISS-REGISTER}.....	61
6.3.3.9	{CISS-RELEASE-COM}.....	62
6.3.4	COMS-messages.....	62
6.3.4.1	{COMS-SETUP}.....	62
6.3.4.2	{COMS-INFO}.....	63
6.3.4.3	{COMS-ACK}.....	64
6.3.4.4	{COMS-CONNECT}.....	64
6.3.4.5	{COMS-RELEASE}.....	65
6.3.4.6	{COMS-RELEASE-COM}.....	65
6.3.4.7	{COMS-NOTIFY}.....	66
6.3.5	CLMS-message.....	66
6.3.5.1	{CLMS-VARIABLE}.....	66
6.3.6	MM-messages.....	67
6.3.6.1	{ACCESS-RIGHTS-ACCEPT}.....	67
6.3.6.2	{ACCESS-RIGHTS-REJECT}.....	67
6.3.6.3	{ACCESS-RIGHTS-REQUEST}.....	68
6.3.6.4	{ACCESS-RIGHTS-TERMINATE-ACCEPT}.....	68
6.3.6.5	{ACCESS-RIGHTS-TERMINATE-REJECT}.....	69
6.3.6.6	{ACCESS-RIGHTS-TERMINATE-REQUEST}.....	69
6.3.6.7	{AUTHENTICATION-REJECT}.....	70
6.3.6.8	{AUTHENTICATION-REPLY}.....	71
6.3.6.9	{AUTHENTICATION-REQUEST}.....	72

6.3.6.10	{ CIPHER-REJECT }	72
6.3.6.11	{ CIPHER-REQUEST }	73
6.3.6.12	{ CIPHER-SUGGEST }	73
6.3.6.13	{ DETACH }	73
6.3.6.14	{ IDENTITY-REPLY }	74
6.3.6.15	{ IDENTITY-REQUEST }	75
6.3.6.16	{ KEY-ALLOCATE }	75
6.3.6.17	{ LOCATE-ACCEPT }	76
6.3.6.18	{ LOCATE-REJECT }	76
6.3.6.19	{ LOCATE-REQUEST }	77
6.3.6.20	{ MM-INFO-ACCEPT }	78
6.3.6.21	{ MM-INFO-REJECT }	78
6.3.6.22	{ MM-INFO-REQUEST }	79
6.3.6.23	{ MM-INFO-SUGGEST }	80
6.3.6.24	{ TEMPORARY-IDENTITY-ASSIGN }	80
6.3.6.25	{ TEMPORARY-IDENTITY-ASSIGN-ACK }	81
6.3.6.26	{ TEMPORARY-IDENTITY-ASSIGN-REJ }	81
6.3.6.27	{ MM-IWU }	82
6.3.6.28	{ MM-NOTIFY }	82
6.3.7	LCE-messages	83
6.3.7.1	{ LCE-PAGE-RESPONSE }	83
6.3.7.2	{ LCE-PAGE-REJECT }	83
6.4	B-FORMAT message functional contents	84
6.4.1	B-FORMAT message overview	84
6.4.2	{ LCE-REQUEST-PAGE }	84
6.4.3	{ CLMS-FIXED }	85
7	S-FORMAT message structures	85
7.1	Overview	85
7.2	Protocol Discrimination (PD) element	86
7.3	Transaction Identifier (TI) element	86
7.4	Message type element	87
7.4.1	Messages for CC	88
7.4.2	Messages for SS	88
7.4.3	Messages for COMS	88
7.4.4	Messages for CLMS	89
7.4.5	Messages for MM	89
7.4.6	Messages for LCE	89
7.5	Other information elements	90
7.5.1	Coding rules	90
7.5.2	Extensions of codesets	92
7.5.3	Locking shift procedure	92
7.5.4	Non-locking shift procedure	93
7.5.5	Display and keypad elements	93
7.5.6	Repeated elements	93
7.6	Fixed length information elements	94
7.6.1	Summary	94
7.6.2	Sending complete, delimiter request and use TPUI	94
7.6.3	Repeat indicator	95
7.6.4	Basic service	95
7.6.5	Single display	96
7.6.6	Single keypad	96
7.6.7	Release reason	97
7.6.8	Signal	98
7.6.9	Timer restart	99
7.6.10	Test hook control	99
7.7	Variable length information elements	99
7.7.1	Summary	99
7.7.2	Allocation type	101
7.7.3	Alphanumeric	101
7.7.4	Auth type	103
7.7.5	Call attributes	104

7.7.6	Call identity	108
7.7.7	Called party number.....	109
7.7.8	Called party subaddress	110
7.7.9	Calling party number	110
7.7.10	Cipher info	111
7.7.11	Connection attributes	112
7.7.12	Connection identity	116
7.7.13	Duration	117
7.7.14	End-to-end compatibility	118
7.7.15	Facility	121
7.7.16	Feature activate	121
7.7.17	Feature indicate.....	123
7.7.18	Fixed identity	125
7.7.19	Identity type	126
7.7.20	Info type.....	127
7.7.21	InterWorking Unit (IWU) attributes	128
7.7.22	IWU packet	133
7.7.23	IWU to IWU	134
7.7.24	Key.....	136
7.7.25	Location area	136
7.7.26	Multi-display.....	137
7.7.27	Multi-keypad.....	138
7.7.28	NetWoRK (NWK) assigned identity.....	138
7.7.29	Network parameter	139
7.7.30	Portable identity	141
7.7.31	Progress indicator	145
7.7.32	RAND	146
7.7.33	Rate parameters	146
7.7.34	Reject reason.....	147
7.7.35	RES	148
7.7.36	RS	149
7.7.37	Segmented info	149
7.7.38	Service change info.....	150
7.7.39	Service class.....	151
7.7.40	Setup capability	152
7.7.41	Terminal capability	153
7.7.42	Transit delay	159
7.7.43	Window size	160
7.7.44	ZAP field	160
7.7.45	Escape to proprietary	161
7.7.46	Model identifier	161
7.7.47	MMS Generic Header.....	162
7.7.48	MMS Object Header.....	162
7.7.49	MMS Extended header	163
7.7.50	Time-Date	163
7.7.51	Ext h/o indicator	165
7.7.52	Called party Name	165
7.7.53	Calling party Name	166
7.7.54	Codec List.....	167
7.7.55	Events notification	168
7.7.55.1	General structure	168
7.7.55.2	Event types	170
7.7.56	Call information.....	174
7.7.57	List change details	177
7.7.58	ULE MAC Configuration Info	179
8	B-FORMAT message structures	180
8.1	General	180
8.2	LCE request paging messages	180
8.2.1	Short format message.....	180
8.2.2	Full format message.....	182
8.2.3	Long format message.....	183

8.2.4	Message elements	183
8.2.4.1	LCE paging header.....	183
8.2.4.2	Info fields (Full format)	185
8.2.4.3	Default setup behaviour	186
8.2.4.4	Address elements in collective or group ringing.....	187
8.3	CLMS-FIXED messages	187
8.3.1	General message structure	187
8.3.2	Message elements	188
8.3.3	Standard message structures	190
8.3.3.1	General	190
8.3.3.2	Messages using 4-bit characters	190
8.3.3.3	Messages using 8-bit characters	190
9	Call Control (CC) procedures.....	190
9.1	General	190
9.2	Call Control (CC) states	193
9.2.1	States at PT	193
9.2.1.1	State T-00: "NULL"	193
9.2.1.2	State T-19: "RELEASE PENDING".....	193
9.2.1.3	State T-10: "ACTIVE"	193
9.2.1.4	State T-01: "CALL INITIATED"	193
9.2.1.5	State T-02: "OVERLAP SENDING"	193
9.2.1.6	State T-03: "CALL PROCEEDING"	193
9.2.1.7	State T-04: "CALL DELIVERED"	193
9.2.1.8	State T-06: "CALL PRESENT"	193
9.2.1.9	State T-07: "CALL RECEIVED"	193
9.2.1.10	State T-08: "CONNECT PENDING"	193
9.2.2	States at FT	194
9.2.2.1	State F-00: "NULL"	194
9.2.2.2	State F-19: "RELEASE PENDING"	194
9.2.2.3	State F-10: "ACTIVE"	194
9.2.2.4	State F-01: "CALL-INITIATED"	194
9.2.2.5	State F-02: "OVERLAP SENDING"	194
9.2.2.6	State F-03: "CALL PROCEEDING"	194
9.2.2.7	State F-04: "CALL DELIVERED"	194
9.2.2.8	State F-06: "CALL PRESENT"	194
9.2.2.9	State F-07: "CALL RECEIVED"	194
9.2.3	Optional states (PT and FT).....	195
9.2.3.1	States T-22 and F-22: "OVERLAP RECEIVING"	195
9.2.3.2	States T-23 and F-23: "INCOMING CALL PROCEEDING"	195
9.3	Call establishment procedures.....	195
9.3.1	PT initiated call establishment (outgoing call).....	195
9.3.1.1	Call request	195
9.3.1.2	Call accept or reject.....	196
9.3.1.3	Selection of lower layer resources	196
9.3.1.4	Connection of U-plane	197
9.3.1.5	Overlap sending	197
9.3.1.6	Call proceeding	198
9.3.1.7	Call confirmation	198
9.3.1.8	Call connection	199
9.3.1.9	Expiry of timer <CC.04>	199
9.3.2	FT initiated call establishment (incoming call).....	199
9.3.2.1	Call request	199
9.3.2.2	Call accept or reject.....	200
9.3.2.3	Selection of lower layer resources	200
9.3.2.4	Connection of U-plane	201
9.3.2.5	Overlap receiving.....	201
9.3.2.6	Call proceeding	201
9.3.2.7	Call confirmation	201
9.3.2.8	Call connection	202
9.3.2.9	Sending of <<TERMINAL-CAPABILITY>>.....	202
9.3.2.10	Expiry of timer <CC.04>	202

9.4	Call information procedures	202
9.5	Call release procedures	202
9.5.1	Normal call release	202
9.5.2	Abnormal call release	203
9.5.2.1	Definitions	203
9.5.2.2	Abnormal release general description (PT or FT)	203
9.5.2.3	Abnormal release in case of call setup collisions	205
9.5.3	Release collisions	208
9.6	Service change procedures	208
9.6.1	General	208
9.6.2	Change of Bandwidth parameters (including changes in connection type)	209
9.6.3	Service rerouting	209
9.6.4	NWK layer service suspension and resumption	209
9.6.5	Modulation scheme change	210
9.7	NWK layer Packet mode procedures	210
9.7.1	General	210
9.7.2	PT initiated access	211
9.7.3	FT initiated access	211
9.7.4	NWK layer suspend and resume	211
9.7.4.1	General	211
9.7.4.2	C-plane NWK layer suspend and resume	212
9.7.4.3	U-plane NWK layer suspend and resume	212
9.8	Emergency call procedure	212
9.9	Segmentation of information in CC procedures	213
10	Supplementary Services procedures	214
10.1	General	214
10.2	Keypad protocol	215
10.3	Feature key management protocol	215
10.4	Functional protocol	216
10.4.1	Separate messages approach	216
10.4.1.1	Hold procedures	216
10.4.1.2	Retrieve procedures	216
10.4.1.3	Auxiliary states for hold and retrieve	217
10.4.2	Common information element approach	217
10.4.2.1	Call Related Supplementary Services (CRSS) procedures	217
10.4.2.2	Call Independent Supplementary Services (CISS) procedures	217
10.4.2.2.1	Transport of CISS	217
10.4.2.3	Connectionless Supplementary Service (CLSS) procedure	218
10.5	Co-existence of multiple protocols	218
10.6	Application protocols	219
10.6.1	DECT standard functional supplementary services	219
10.6.2	DECT specific supplementary services	220
10.6.2.1	Queue management	220
10.6.2.2	Indication of subscriber number	220
10.6.2.3	Control of echo control functions	221
10.6.2.4	Cost information	221
11	Connection Oriented Message Service (COMS)	222
11.1	General	222
11.2	COMS states	222
11.2.1	States at PT	222
11.2.1.1	State TS-0: "NULL"	222
11.2.1.2	State TS-1: "CONNECT PENDING"	222
11.2.1.3	State TS-2: "RELEASE PENDING"	222
11.2.1.4	State TS-3: "ACTIVE"	222
11.2.2	States at FT	222
11.2.2.1	State FS-0: "NULL"	222
11.2.2.2	State FS-1: "CONNECT PENDING"	222
11.2.2.3	State FS-2: "RELEASE PENDING"	222
11.2.2.4	State FS-3: "ACTIVE"	223
11.3	COMS establishment procedures	223

11.3.1	PT initiated COMS establishment	223
11.3.1.1	COMS request.....	223
11.3.1.2	COMS connection.....	223
11.3.2	FT initiated COMS establishment	224
11.3.2.1	COMS request.....	224
11.3.2.2	COMS connection.....	224
11.4	COMS data transfer procedures	224
11.4.1	Procedure at the sending side.....	224
11.4.2	Procedure at the receiving side	225
11.5	COMS NWK layer suspend and resume procedures.....	226
11.6	COMS release procedures	226
11.6.1	Normal COMS release.....	226
11.6.2	Release collisions.....	226
12	ConnectionLess Message Service (CLMS).....	227
12.1	General	227
12.2	CLMS states	227
12.3	CLMS message transmission procedures	227
12.3.1	Fixed length messages	227
12.3.1.1	Procedure in the Fixed radio Termination (FT)	227
12.3.1.2	Procedure in the Portable radio Termination (PT)	228
12.3.2	Variable length messages.....	228
12.3.2.1	Procedure at the sending side	228
12.3.2.2	Procedure at the receiving side.....	228
12.3.2.3	Restrictions for portable side initiated messages.....	229
13	Mobility Management (MM) procedures.....	229
13.1	General	229
13.2	Identity procedures	230
13.2.1	Procedure for identification of PT	230
13.2.2	Procedure for temporary identity assignment	231
13.3	Authentication procedures.....	232
13.3.1	Authentication of a PT.....	232
13.3.2	Authentication of the user.....	234
13.3.3	Authentication of a FT.....	234
13.4	Location procedures	235
13.4.1	Location registration	236
13.4.2	Detach	237
13.4.3	Location update	238
13.5	Access rights procedure.....	238
13.5.1	Obtaining the access rights	238
13.5.2	Termination of access rights	239
13.5.3	Modification of access rights	241
13.6	Key allocation procedure.....	242
13.7	Parameter retrieval procedure.....	243
13.8	Ciphering related procedure	245
13.9	External protocol information procedure	247
13.9.1	Procedure for external protocol information initiated by the FT	247
13.9.2	Procedure for external protocol information initiated by the PT	247
13.9.3	Segmentation of information in MM procedures.....	248
14	Link Control Entity (LCE) procedures.....	249
14.1	General	249
14.2	Connection oriented link control procedures.....	250
14.2.1	Link establishment.....	250
14.2.2	Direct PT initiated link establishment.....	250
14.2.3	Indirect (paged) FT initiated link establishment	251
14.2.4	Direct FT initiated link establishment.....	252
14.2.5	Link maintenance.....	253
14.2.6	Link suspend and resume.....	253
14.2.6.1	Link suspend	253
14.2.6.2	Link resume.....	254
14.2.7	Link release.....	254

14.2.7.1	NLR notification without "partial release" as release reason	254
14.2.7.2	NLR notification with "partial release" as release reason	255
14.3	Connectionless link control procedures.....	255
14.3.1	Message routing.....	255
14.3.2	Broadcast announce procedure	255
14.3.3	LCE paging codes for connectionless service.....	256
14.4	Procedure for collective and group ringing	256
14.5	LCE paging procedures for DPRS	257
14.5.1	DPRS initial setup paging.....	257
14.5.1.1	Assumptions for Short paging format or for Full format with IPUI.....	257
14.5.1.2	Coding for Full paging format with TPUI.....	257
14.5.2	DPRS Resume paging.....	258
14.5.2.1	Assumptions for Short paging format or for Full format with IPUI.....	258
14.5.2.2	Coding for Full paging format with TPUI.....	258
14.5.2.3	LCE Resume Procedure description.....	259
14.5.3	Special cases	259
14.5.3.1	Rule for DPRS Class 1 devices	259
14.5.3.2	Rule for backcompatibility with former A/B 1 devices	259
15	Management procedures.....	260
15.1	Lower Layer Management Entity (LLME)	260
15.2	Service mapping and negotiation	260
15.2.1	General.....	260
15.2.2	Prioritized list negotiation.....	260
15.2.3	Exchanged attribute negotiation	261
15.2.4	Operating parameter negotiation.....	261
15.2.5	Peer attribute negotiation	262
15.3	Service modification procedures	262
15.4	Resource management.....	262
15.5	Management of MM procedures	262
15.6	Call ciphering management.....	264
15.7	External Handover.....	264
15.7.1	Handover candidate procedures	264
15.7.1.1	General	264
15.7.1.2	Handover candidate indication	265
15.7.1.3	Handover candidate retrieval	265
15.7.1.4	Target FP selection.....	266
15.7.2	Handover reference procedure	266
15.7.2.1	General	266
15.7.2.2	Handover reference indication	266
15.7.2.3	Handover reference retrieval	266
15.7.3	External handover suggested by FP	267
15.7.4	NWK layer set up procedure.....	267
15.7.4.1	Handover request	267
15.7.4.2	Handover confirm	267
15.7.4.3	Handover accept.....	267
15.7.4.4	Handover reject.....	267
15.7.4.5	Release of old connection	268
15.7.4.6	Handover Fall Back.....	268
15.7.5	U-plane handling	268
15.7.6	Ciphering procedure	269
15.7.7	Interaction with location registration	269
15.8	Test management procedures	270
15.8.1	Test call back procedure	270
15.8.2	Test hook control procedures.....	270
15.8.3	Upper tester procedure.....	271
15.9	Application assistance procedures.....	271
15.9.1	DECT Identity Resolution (Retrieval) Procedure	271
15.9.1.1	FT (or HyP) initiated Connectionless Identity Resolution procedure	271
15.9.1.2	PT initiated Connectionless Identity Resolution procedure	272
15.9.1.3	Connection oriented Identity Resolution procedure.....	272
15.9.2	Application Address Resolution (Retrieval) Procedure.....	272

15.9.3	Application Parameter Allocation Procedure.....	272
15.9.3.1	FT initiated application parameter allocation procedure.....	273
15.9.3.2	PT initiated application parameter allocation procedure.....	273
15.9.4	Application parameter information procedure.....	273
15.9.4.1	FT initiated connection oriented Application parameter information procedure	273
15.9.4.2	PT initiated connection oriented Application parameter information procedure	274
15.9.4.3	FT initiated connectionless Application parameter information procedure	274
15.9.4.4	PT initiated connectionless Application parameter information procedure	274
15.9.5	Application Parameter Indication procedure	275
16	Primitives	275
16.1	Primitive types.....	275
16.2	Primitives to lower layer (DLC layer).....	275
16.3	Primitives to IWU	276
16.3.1	Parameter definitions	276
16.3.2	MNCC primitives	276
16.3.2.1	MNCC_SETUP primitive	277
16.3.2.2	MNCC_SETUP_ACK primitive.....	277
16.3.2.3	MNCC_REJECT primitive	278
16.3.2.4	MNCC_CALL_PROC primitive.....	278
16.3.2.5	MNCC_ALERT primitive	279
16.3.2.6	MNCC_CONNECT primitive.....	279
16.3.2.7	MNCC_RELEASE primitive.....	280
16.3.2.8	MNCC_FACILITY primitive	280
16.3.2.9	MNCC_INFO primitive	281
16.3.2.10	MNCC_MODIFY primitive.....	281
16.3.2.11	MNCC_HOLD primitive	281
16.3.2.12	MNCC_RETRIEVE primitive	282
16.3.2.13	MNCC_IWU_INFO primitive	282
16.3.3	MNSS primitives	282
16.3.3.1	MNSS_SETUP primitive	282
16.3.3.2	MNSS_FACILITY primitive	283
16.3.3.3	MNSS_RELEASE primitive	283
16.3.4	MNCO primitives	283
16.3.4.1	MNCO_SETUP primitive	284
16.3.4.2	MNCO_CONNECT primitive	284
16.3.4.3	MNCO_INFO primitive.....	284
16.3.4.4	MNCO_ACK primitive.....	284
16.3.4.5	MNCO_RELEASE primitive.....	285
16.3.4.6	MNCO_REJECT primitive.....	285
16.3.5	MNCL primitives.....	285
16.3.5.1	MNCL_UNITDATA primitive	285
16.3.6	MM primitives	286
16.3.6.1	MM_IDENTITY primitive	286
16.3.6.2	MM_IDENTITY_ASSIGN primitive	286
16.3.6.3	MM_AUTHENTICATE primitive	287
16.3.6.4	MM_LOCATE primitive	287
16.3.6.5	MM_DETACH primitive.....	287
16.3.6.6	MM_ACCESS_RIGHTS primitive.....	288
16.3.6.7	MM_ACCESS_RIGHTS_TERMINATE primitive.....	288
16.3.6.8	MM_KEY_ALLOCATE primitive	288
16.3.6.9	MM_INFO primitive.....	289
16.3.6.10	MM_CIPHER primitive.....	289
16.3.6.11	MM_IWU primitive	289
17	Handling of error and exception conditions	290
17.1	Protocol discrimination error.....	290
17.2	Message too short.....	290
17.3	Transaction identifier error.....	290
17.3.1	Illegal and unsupported transaction identifier value	290
17.3.2	Transaction identifier procedural errors and exception conditions	290
17.3.2.1	Unknown active CC call	290

17.3.2.2	Unknown active CISS call	291
17.3.2.3	Unknown active COMS call	291
17.3.2.4	Unknown active CLMS call	291
17.3.2.5	Unknown active MM transaction	291
17.3.2.6	Unknown active LCE transaction	291
17.3.3	Call Resource Contention	291
17.4	Message type or message sequence errors	292
17.4.1	CC message error	292
17.4.2	CISS message error	292
17.4.3	COMS or CLMS message error	292
17.4.4	MM message error	292
17.4.5	LCE message error	292
17.5	General information element errors	292
17.5.1	Information element out of sequence	292
17.5.2	Duplicated information elements	293
17.6	Mandatory information element errors	293
17.6.1	Mandatory information element missing in CC messages	293
17.6.2	Mandatory information element content error in CC messages	293
17.6.3	Mandatory information element error in COMS or CLMS messages	293
17.6.4	Mandatory information element error in MM messages	294
17.6.5	Mandatory information element error in LCE messages	294
17.7	Non-mandatory information element errors	294
17.7.1	Unrecognized information element	294
17.7.2	Non-mandatory information element content error	294
17.8	Data link reset	295
17.9	Data link failure	295
Annex A (normative):	System parameters	296
A.1	CC timers	296
A.2	SS timers	297
A.3	COMS timers	297
A.4	CLMS timer	298
A.5	MM timers	298
A.6	LCE timers	301
A.7	NWK layer constants	302
A.8	Restart	302
Annex B (normative):	CC state transition tables	303
B.1	CC state transitions at PT side	303
B.1.1	CC state table at PT side	303
B.1.2	CC transition procedures at PT side	304
B.2	CC state transitions at FT side	306
B.2.1	CC state table at FT side	306
B.2.2	CC transition procedures at FT side	306
Annex C (informative):	DLC states as viewed by the LCE	309
Annex D (normative):	DECT standard character sets	310
D.1	General	310
D.2	DECT standard 8-bit characters	310
D.2.1	General	310
D.2.2	Control codes	311
D.2.3	Standard IA5 codes	312
D.2.4	extended codes and escape to alternative character sets	312

D.3	DECT standard 4-bit characters	312
Annex E (normative): Default coding of information elements.....		313
E.1	Default coding of <<IWU-ATTRIBUTES>> and <CALL-ATTRIBUTES>> information elements for basic speech	313
E.2	Default coding of <<IWU-ATTRIBUTES>>, <<CALL-ATTRIBUTES>> and <<CONNECTION-ATTRIBUTES>> information elements for wideband speech	313
E.2.1	Default setup attributes for basic service wideband speech	314
Annex F (normative): Broadcast attributes coding		315
F.1	Higher layer capabilities.....	315
F.2	Extended higher layer capabilities	316
F.3	Extended higher layer capabilities (part 2).....	316
Annex G (normative): Use of <<IWU-PACKET>> and <<IWU-TO-IWU>> information elements		318
G.1	General	318
G.2	Sending of <<IWU-PACKET>> elements.....	318
G.2.1	CC and MM use of <<IWU-PACKET>>	318
G.2.2	COMS and CLMS use of <<IWU-PACKET>>.....	318
G.2.3	Rejection of <<IWU-PACKET>> elements	318
G.3	Use of <<IWU-TO-IWU>> elements	319
G.3.1	Sending of <<IWU-TO-IWU>> elements.....	319
G.3.2	Rejection of <<IWU-TO-IWU>> elements	319
Annex H (normative): Transaction identifier flags (TIF) assignment in MM procedures.....		320
H.1	General	320
H.2	Nested procedures	320
H.3	Stand alone procedures.....	321
H.3.1	Location update procedure	321
H.3.2	Location registration procedure with temporary identity assignment	321
H.3.3	PT initiated cipher switching	322
H.3.4	Key allocation	322
H.4	External protocol information procedure	323
Annex I (normative): Distributed communications.....		324
I.1	Introduction	324
I.2	General requirements	324
I.2.1	DCDL-net.....	324
I.2.2	Subscription.....	324
I.2.3	Communication	325
I.3	Procedure description	326
I.3.1	HyP Identities	326
I.3.2	Membership Access Rights Allocation	326
I.3.3	Re-initialization of membership access rights	327
I.3.4	Members Data Transfer	327
I.3.5	Presence/Absence Indication.....	329
I.3.6	Bandwidth management	329
I.3.7	Direct Link Establishment.....	330
I.3.8	Indirect Link Establishment	331
I.3.9	MASTER management	332
I.3.9.1	MASTER assign	332