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

Táto norma obsahuje anglickú verziu európskej normy.  
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Common Interface (CI);  
Part 5: Network (NWK) layer**

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# 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
<b>Annex A (normative): System parameters .....</b>		<b>296</b>
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
<b>Annex B (normative): CC state transition tables .....</b>		<b>303</b>
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
<b>Annex C (informative): DLC states as viewed by the LCE .....</b>		<b>309</b>
<b>Annex D (normative): DECT standard character sets .....</b>		<b>310</b>
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
<b>Annex E (normative): Default coding of information elements.....</b>		<b>313</b>
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
<b>Annex F (normative): Broadcast attributes coding .....</b>		<b>315</b>
F.1	Higher layer capabilities.....	315
F.2	Extended higher layer capabilities .....	316
F.3	Extended higher layer capabilities (part 2).....	316
<b>Annex G (normative): Use of &lt;&lt;IWU-PACKET&gt;&gt; and &lt;&lt;IWU-TO-IWU&gt;&gt; information elements .....</b>		<b>318</b>
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
<b>Annex H (normative): Transaction identifier flags (TIF) assignment in MM procedures.....</b>		<b>320</b>
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
<b>Annex I (normative): Distributed communications.....</b>		<b>324</b>
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

I.3.9.2	MASTER Change .....	332
I.3.9.3	DCDL-net System bearer management .....	332
I.3.10	Common Subscription Database management .....	333
I.3.10.1	IdN .....	333
I.3.10.2	RFPI, PARK and PLI.....	333
I.3.10.3	IPUI .....	334
I.3.10.4	TPUI and LAL .....	334
I.3.10.5	Keys .....	334
I.3.11	Handover issues.....	334
I.4	Elements of Messages/Information Elements .....	334
I.4.1	CLMS-FIXED .....	335
I.4.2	IWU-TO-IWU .....	335
I.4.3	Info-type .....	336
I.4.4	CLMS-VARIABLE.....	336
I.5	Examples .....	336
I.5.1	General .....	336
I.5.2	Example 1 .....	337
I.5.3	Example 2 .....	337
I.5.4	Example 3 .....	338
I.5.5	Example 4 .....	339
I.6	Usage of PPs or FPs in DCDL-net .....	340
I.6.1	General .....	340
I.6.2	Requirements to FPs.....	340
I.6.2.1	General.....	340
I.6.2.2	Members Data Transfer .....	341
I.6.2.3	Direct Link Establishment .....	341
I.6.3	Requirements to PPs.....	342
I.6.3.1	General.....	342
I.6.3.2	Membership Access Rights Allocation.....	342
I.6.3.3	Members Data Transfer .....	343
I.6.3.4	Direct Link Establishment .....	343
I.6.3.5	Indirect Link Establishment.....	343
<b>Annex J (normative):</b>	<b>Scrolling Behaviour .....</b>	<b>344</b>
<b>Annex K (normative):</b>	<b>Additional information on Message Elements .....</b>	<b>346</b>
K.1	Detailed description of the different connection types as defined by the IE <Connection Attributes>.....	346
K.1.1	General .....	346
K.1.1.1	Real number of bearers "on the air" .....	346
K.1.1.2	Definitions (applicable to all connection types).....	346
K.1.2	Types of connection .....	347
K.1.2.1	Symmetric only connections.....	347
K.1.2.2	Asymmetric frozen connections .....	347
K.1.2.3	Asymmetric reversible connections .....	348
K.1.2.4	Asymmetric one-way-only connections.....	349
K.1.2.5	Asymmetric unrestricted connections .....	351
<b>Annex L (informative):</b>	<b>Additional information on paging .....</b>	<b>352</b>
L.1	List of "well-known" uses of LCE paging codes .....	352
L.1.1	Purpose of the list .....	352
L.1.2	List of "well-known" uses of LCE paging codes.....	353
L.2	Compatibility with historic DECT devices .....	353
L.2.1	Rule for compatibility with devices based on former data profile A/B 1 (historic) .....	353
<b>Annex M (informative):</b>	<b>UTF-8 encoded character sets - Guidelines for implementation .....</b>	<b>355</b>
M.1	General .....	355

M.2	Characters sets tables.....	355
M.3	Encoding of Western Europe languages.....	355
M.4	Encoding of Hebrew.....	359
M.5	Useful symbols.....	360
<b>Annex N (informative):</b>	<b>Bibliography.....</b>	<b>362</b>
<b>Annex O (informative):</b>	<b>Change history .....</b>	<b>364</b>
History .....		365

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## Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document is part 5 of a multi-part deliverable ([1] to [8]). Full details of the entire series can be found in part 1 [1].

Further details of the DECT system may be found in TR 101 178 [i.1] and ETR 043 [i.2].

<b>National transposition dates</b>	
Date of adoption of this EN:	20 August 2013
Date of latest announcement of this EN (doa):	30 November 2013
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# 1 Scope

The present document is one of the parts of the specification of the Digital Enhanced Cordless Telecommunications (DECT) Common Interface (CI).

The present document specifies the Network (NWK) layer. The NWK layer is part 5 of the EN 300 175 and layer 3 of the DECT protocol stack.

Network layer	Network layer
C-plane (3)	U-plane
DLC layer	DLC layer
C-plane (2b)	U-plane
MAC layer	
(2a)	
Physical layer	
(1)	

**Figure 1a**

The present document only specifies the C-plane (control plane) of the DECT NWK layer. It contains no specification for the U-plane (user plane) because the U-plane is null for all services at the DECT NWK layer.

The C-plane contains all of the internal signalling information, and the NWK layer protocols are grouped into the following families of procedures:

- Call Control (CC);
- Supplementary Services (SS);
- Connection Oriented Message Service (COMS);
- ConnectionLess Message Service (CLMS);
- Mobility Management (MM);
- Link Control Entity (LCE).

The present document uses the layered model principles and terminology as described in Recommendations ITU-T X.200 [i.3] and X.210 [i.4].

The present document includes New Generation DECT, a further development of the DECT standard introducing wideband speech, improved data services, new slot types and other technical enhancements.

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## 2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

### 2.1 Normative references

The following referenced documents are necessary for the application of the present document.

- [1] ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- [2] ETSI EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer (PHL)".
- [3] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- [4] ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- [5] Void.
- [6] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- [7] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
- [8] ETSI EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech and audio coding and transmission".
- [9] ETSI EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".
- [10] ETSI TS 144 018: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification; Radio Resource Control (RRC) protocol (3GPP TS 44.018)".
- [11] ISO/IEC 2022: "Information technology - Character code structure and extension techniques".
- [12] ETSI ETS 300 133 (all parts): "ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Enhanced Radio MESSage System (ERMES)".
- [13] ETSI EN 300 001: "Attachments to the Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN".
- [14] ETSI EN 300 196-1: "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [15] ETSI ETS 300 125: "Integrated Services Digital Network (ISDN); User-network interface data link layer specification; Application of CCITT Recommendations Q.920/I.440 and Q.921/I.441".
- [16] Recommendation ITU-T T.71: "Link Access Protocol Balanced (LAPB) extended for half-duplex physical level facility".

- [17] ISO/IEC 8802-2: "Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 2: Logical link control".
- [18] ISO/IEC 8208: "Information technology - Data communications - X.25 Packet Layer Protocol for Data Terminal Equipment".
- [19] ISO/IEC 8348: "Information technology - Open Systems Interconnection - Network service definition".
- [20] ISO/IEC 8473 (all parts): "Information technology - Protocol for providing the connectionless-mode network service".
- [21] Recommendation ITU-T X.263: "Information technology - Protocol identification in the Network Layer".
- [22] ETSI EN 300 130-1: "Integrated Services Digital Network (ISDN); Malicious Call Identification (MCID) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [23] ETSI EN 300 207-1: "Integrated Services Digital Network (ISDN); Diversion supplementary services; Digital Subscriber Signalling System No. One (DSS1); Part 1: Protocol specification".
- [24] ETSI EN 300 286-1: "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [25] ETSI EN 300 092-1: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [26] ETSI EN 300 093-1: "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [27] ETSI EN 300 097-1: "Integrated Services Digital Network (ISDN); Connected Line Identification Presentation (COLP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [28] ETSI EN 300 098-1: "Integrated Services Digital Network (ISDN); Connected Line Identification Restriction (COLR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [29] ETSI EN 300 359-1: "Integrated Services Digital Network (ISDN); Completion of Calls to Busy Subscriber (CCBS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [30] ETSI EN 300 210-1: "Integrated Services Digital Network (ISDN); Freephone (FPH) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [31] ETSI EN 300 182-1: "Integrated Services Digital Network (ISDN); Advice of Charge (AOC) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [32] ETSI EN 300 061-1: "Integrated Services Digital Network (ISDN); Subaddressing (SUB) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [33] ETSI EN 300 055-1: "Integrated Services Digital Network (ISDN); Terminal Portability (TP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

- [34] ETSI EN 300 058-1: "Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service; Digital subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [35] ETSI EN 300 064-1: "Integrated Services Digital Network (ISDN); Direct Dialling In (DDI) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [36] ETSI EN 300 052-1: "Integrated Services Digital Network (ISDN); Multiple Subscriber Number (MSN) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [37] ETSI EN 300 138-1: "Integrated Services Digital Network (ISDN); Closed User Group (CUG) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [38] ETSI EN 300 369-1: "Integrated Services Digital Network (ISDN); Explicit Call Transfer (ECT) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [39] ETSI EN 300 185-1: "Integrated Services Digital Network (ISDN); Conference call, add-on (CONF) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [40] ETSI EN 300 141-1: "Integrated Services Digital Network (ISDN); Call Hold (HOLD) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [41] ETSI EN 300 188-1: "Integrated Services Digital Network (ISDN); Three-Party (3PTY) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [42] Recommendation ITU-T E.182: "Application of tones and recorded announcements in telephone services".
- [43] ETSI TS 144 006: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Stations System (MS - BSS) Interface Data Link (DL) layer specification (3GPP TS 44.006)".
- [44] Recommendation ITU-T X.25: "Interface between Data Terminal Equipment (DTE) and Data Circuit-terminating Equipment (DCE) for terminals operating in the packet mode and connected to public data networks by dedicated circuit".
- [45] Recommendation ITU-T T.70: "Network-independent basic transport service for the telematic services".
- [46] ISO 1745: "Information processing - Basic mode control procedures for data communication systems".
- [47] ISO/IEC 8859-1: "Information technology - 8-bit single-byte coded graphic character sets - Part 1: Latin alphabet No. 1".
- [48] ETSI EN 300 757: "Digital Enhanced Cordless Telecommunications (DECT); Low Rate Messaging Service (LRMS); including Short Messaging Service (SMS)".
- [49] ETSI EN 300 370: "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT/GSM Interworking Profile (IWP); Access and mapping (protocol/procedure description for 3,1 kHz speech service)".
- [50] ETSI EN 300 765-1: "Digital Enhanced Cordless Telecommunications (DECT); Radio in the Local Loop (RLL) Access Profile (RAP); Part 1: Basic telephony services".
- [51] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".
- [52] ISO/IEC 8859-15: "Information technology - 8-bit single-byte coded graphic character sets - Part 15: Latin alphabet No. 9".

- [53] ISO/IEC 8859-7: "Information technology - 8-bit single-byte coded graphic character sets - Part 7: Latin/Greek alphabet".
- [54] ISO/IEC 8859-9: "Information technology - 8-bit single-byte coded graphic character sets - Part 9: Latin alphabet No. 5".
- [55] Recommendation ITU-T V.110: "Support by an ISDN of data terminal equipments with V-Series type interfaces".
- [56] Recommendation ITU-T V.120: "Support by an ISDN of data terminal equipment with V-Series type interfaces with provision for statistical multiplexing".
- [57] Recommendation ITU-T X.30: "Support of X.21, X.21 bis and X.20 bis based Data Terminal Equipments (DTEs) by an Integrated Services Digital Network (ISDN)".
- [58] ETSI EN 300 765-2: "Digital Enhanced Cordless Telecommunications (DECT); Radio in the Local Loop (RLL) Access Profile (RAP); Part 2: Advanced telephony services".
- [59] ISO/IEC 646: "Information technology - ISO 7-bit coded character set for information interchange".
- [60] Recommendation ITU-T X.400: "Message handling system and service overview".
- [61] ETSI TS 101 863 (all parts): "Digital Enhanced Cordless Telecommunications (DECT); DECT/UMTS Interworking Profile (IWP)".
- [62] ETSI TS 124 008: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Mobile radio interface Layer 3 specification; Core network protocols; Stage 3 (3GPP TS 24.008)".
- [63] ETSI EN 300 700: "Digital Enhanced Cordless Telecommunications (DECT); Wireless Relay Station (WRS)".
- [64] IETF RFC 791 (STD5): "Internet Protocol".
- [65] IETF RFC 1661 (STD51): "The Point-to-Point Protocol (PPP)".
- [66] IETF RFC 2460: "Internet Protocol, Version 6 (IPv6) Specification".
- [67] IETF RFC 3261: "SIP: Session Initiation Protocol".
- [68] Recommendation ITU-T V.42: "Error-correcting procedures for DCEs using asynchronous-to-synchronous conversion".
- [69] ETSI TS 102 265: "Digital Enhanced Cordless Telecommunications (DECT); DECT access to IP networks".
- [70] ETSI TS 102 342: "Digital Enhanced Cordless Telecommunications (DECT); Cordless multimedia communication system; Open Data Access Profile (ODAP)".
- [71] ETSI TS 102 379: "Digital Enhanced Cordless Telecommunications (DECT); Fixed network Multimedia Message Service (F-MMS) Interworking Profile".
- [72] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)".
- [73] ETSI TS 102 527-1: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 1: Wideband speech".
- [74] ETSI TS 102 527-2: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 2: Support of transparent IP packet data".
- [75] ETSI TS 102 527-3: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 3: Extended wideband speech services".

- [76] ETSI TS 102 527-4: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 4: Light Data Services; Software Update Over The Air (SUOTA), content downloading and HTTP based applications".
- [77] IETF RFC 3629: "UTF-8, a transformation format of ISO 10646".
- [78] ETSI TS 102 527-5: "Digital Enhanced Cordless Telecommunications (DECT); New Generation DECT; Part 5: Additional feature set nr. 1 for extended wideband speech services".
- [79] ETSI TS 102 939-1: "Digital Enhanced Cordless Telecommunications (DECT); Ultra Low Energy (ULE); Machine to Machine Communications; Part 1: Home Automation Network (phase 1)".

## 2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] ETSI TR 101 178: "Digital Enhanced Cordless Telecommunications (DECT); A High Level Guide to the DECT Standardization".
- [i.2] ETSI ETR 043: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Services and facilities requirements specification".
- [i.3] Recommendation ITU-T X.200: "Information technology - Open Systems Interconnection - Basic Reference Model: The basic model".
- [i.4] Recommendation ITU-T X.210: "Information technology - Open systems interconnection - Basic Reference Model: Conventions for the definition of OSI services".
- [i.5] Recommendation ITU-T T.50: "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange".
- [i.6] ETSI I-ETS 300 022: "Digital cellular telecommunications system (Phase 1) (GSM); Mobile radio interface; Layer 3 specification".
- [i.7] Recommendation ITU-T E.163: "Numbering plan for the international telephone service".
- [i.8] Recommendation ITU-T E.164: "The international public telecommunication numbering plan".
- [i.9] Recommendation ITU-T X.121: "International numbering plan for public data networks".
- [i.10] Recommendation ITU-T I.460: "Multiplexing, rate adaption and support of existing interfaces".
- [i.11] IEEE 802.3: "IEEE 802.3 Systems Networking Guide: How to Optimize Your Network Using the ISO/IEC 8802-3 Carrier Sense Multiple Access with Collision Detection (CSMA/CD) Standard".
- [i.12] Recommendation ITU-T Q.921: "ISDN user-network interface - Data link layer specification".
- [i.13] ETSI EN 301 238: "Digital Enhanced Cordless Telecommunications (DECT); Data Services Profile (DSP); Isochronous data bearer services with roaming mobility (service type D, mobility class 2)".
- [i.14] ETSI ETS 300 435 (historical): "Digital Enhanced Cordless Telecommunications (DECT); Data Services Profile (DSP); Base standard including interworking to connectionless networks (service types A and B, class 1)".
- [i.15] Recommendation ITU-T Q.931: "ISDN user-network interface layer 3 specification for basic call control".
- [i.16] Unicode <http://www.unicode.org/>.
- [i.17] ISO 8859 (all parts): "Information technology - 8-bit single-byte coded graphic character sets".

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