



**SLOVENSKI STANDARD**  
**SIST EN 301 349 V8.4.1:2005**  
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dU\_Yh]fUbj]a ]`dcXUh\_]`f] DFGL!`AcV]`bUdcghU`UfA GL!`Ja Ygb]\_`g]ghYa UVUhb]\  
dcghU`f6 GGL`dfc]c\_c``\_cb]fc`YfUX]`g\_Y`dcj YnUj Y]b`Xc]g]cdUXc`dfYbc]gbY[ U  
a YX]`UfF @`#A57L`f] GA`\$( `"\$zfUh`] ]WU, ("`%z]nXUU% --L

Digital cellular telecommunications system (Phase 2+) (GSM); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol (GSM 04.60 version 8.4.1 Release 1999)

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# ETSI EN 301 349 V8.4.1 (2000-10)

*European Standard (Telecommunications series)*

**Digital cellular telecommunications system (Phase 2+);  
General Packet Radio Service (GPRS);  
Mobile Station (MS) - Base Station System (BSS) interface;  
Radio Link Control/Medium Access  
Control (RLC/MAC) protocol  
(GSM 04.60 version 8.4.1 Release 1999)**

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**GSM**®  
GLOBAL SYSTEM FOR  
MOBILE COMMUNICATIONS

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# Contents

Intellectual Property Rights .....	11
Foreword.....	11
1 Scope .....	12
2 References .....	13
3 Definitions and abbreviations.....	14
3.1 Vocabulary .....	14
4 Layered overview of radio interface.....	16
4.1 Layer services.....	17
4.2 Layer functions.....	17
4.3 Service primitives.....	17
4.4 Services required from lower layers.....	17
5 Introduction to the Medium Access Control (MAC) procedures .....	17
5.1 General .....	17
5.2 Multiplexing principles .....	18
5.2.1 Temporary Block Flow .....	18
5.2.2 Temporary Flow Identity .....	18
5.2.3 Uplink State Flag .....	18
5.2.4 Medium Access modes .....	18
5.2.4a Multiplexing of GPRS and EGPRS MSs.....	19
5.2.4a.1 Fixed Allocation.....	19
5.3 Packet idle mode .....	19
5.4 Packet transfer mode .....	19
5.5 General procedures in packet idle and packet transfer modes.....	20
5.5.1 Mobile station side.....	20
5.5.1.1 Cell reselection.....	20
5.5.1.2 System information on PBCCH.....	21
5.5.1.2.1 Supervision of PBCCH_CHANGE_MARK and update of PBCCH information.....	21
5.5.1.2.2 Replacement of PBCCH.....	22
5.5.1.2.3 PSII reception failure .....	22
5.5.1.3 System information on BCCH .....	22
5.5.1.3.1 Supervision of BCCH_CHANGE_MARK and update of BCCH information .....	22
5.5.1.3.2 Establishment of PBCCH .....	23
5.5.1.3.3 SI13 reception failure .....	23
5.5.1.4 Acquisition of system information on the broadcast channel.....	23
5.5.1.4.1 Consistent sets of system information messages .....	24
5.5.1.4.2 Suspension of operation to receive system information .....	24
5.5.1.4.3 Request for acquisition of system information .....	24
5.5.1.5 Discontinuous reception (DRX).....	25
5.5.1.6 Page mode procedures on PCCCH.....	25
5.5.1.7 Frequency Parameters .....	26
5.5.1.8 TLLI management.....	27
5.5.1.9 Packet Flow Context (PFC) .....	27
5.5.2 Network side.....	27
5.5.2.1 System Information broadcasting.....	27
5.5.2.1.1 System information on PBCCH .....	27
5.5.2.1.2 System information on BCCH.....	28
5.5.2.1.3 System information on PACCH (and other logical channels) .....	29
5.5.2.1.4 Consistent sets of system information messages .....	29
5.5.2.2 Paging .....	30
5.6 Measurement reports .....	30
5.6.1 Network Control (NC) measurement reporting .....	30
5.6.2 Extended measurement (EM) reporting.....	31

6	Paging procedures .....	31
6.1	Paging procedure for RR connection establishment.....	31
6.1.1	Paging initiation using paging subchannel on CCCH.....	32
6.1.2	Paging initiation using paging subchannel on PCCCH.....	32
6.1.3	Paging initiation using PACCH.....	32
6.1.4	Paging response .....	32
6.2	Paging procedure for downlink packet transfer.....	32
6.2.1	Paging procedure using paging subchannel on CCCH .....	32
6.2.2	Paging using paging subchannel on PCCCH.....	32
6.2.3	Paging response .....	33
7	Medium Access Control (MAC) procedures on PCCCH.....	33
7.1	TBF establishment initiated by the mobile station on PCCCH .....	33
7.1.1	Permission to access the network .....	33
7.1.2	Initiation of a TBF establishment .....	34
7.1.2.1	Initiation of the packet access procedure .....	34
7.1.2.1.1	Access persistence control on PRACH.....	35
7.1.2.2	Packet assignment procedure .....	36
7.1.2.2.1	On receipt of a PACKET CHANNEL REQUEST or EGPRS PACKET CHANNEL REQUEST message.....	36
7.1.2.2.1a	Acquisition of MS Radio Access Capability information within EGPRS TBF establishment procedure.....	37
7.1.2.2.2	Packet access queuing notification procedure .....	37
7.1.2.2.3	Packet polling procedure .....	38
7.1.2.2.4	Packet access reject procedure .....	38
7.1.2.3	Contention resolution at one phase access .....	39
7.1.2.3a	Contention resolution at one phase access for EGPRS TBFs .....	39
7.1.2.4	One phase packet access completion .....	40
7.1.2.5	Timing Advance.....	40
7.1.2.6	PFC procedure at one phase access.....	40
7.1.3	TBF establishment using two phase access .....	40
7.1.3.1	Initiation of the Packet resource request procedure.....	40
7.1.3.2	Packet resource assignment for uplink procedure.....	41
7.1.3.2.1	On receipt of a PACKET RESOURCE REQUEST message.....	41
7.1.3.3	Contention resolution at two phase access .....	42
7.1.3.4	Two phase packet access completion.....	43
7.1.3.5	Timing Advance.....	43
7.1.4	Abnormal cases.....	43
7.2	TBF establishment initiated by the network on PCCCH.....	43
7.2.1	Entering the packet transfer mode .....	44
7.2.1.1	Packet downlink assignment procedure .....	44
7.2.1.2	Packet downlink assignment procedure completion .....	45
7.2.1.3	Packet polling procedure.....	45
7.2.2	Abnormal cases.....	45
7.3	Procedure for measurement report sending in packet idle mode.....	45
7.3.1	Measurement report sending procedure initiated on PCCCH.....	46
7.3.1.1	On receipt of a PACKET CHANNEL REQUEST message .....	46
7.3.1.2	On receipt of a PACKET UPLINK ASSIGNMENT message.....	46
7.3.1.3	On receipt of a PACKET ACCESS REJECT message .....	46
7.3.1.4	Abnormal cases .....	47
7.3.2	Measurement report sending procedure initiated on CCCH .....	47
7.4	Cell Change Order procedures in Packet Idle mode.....	47
7.4.1	Cell Change Order procedure initiated on PCCCH .....	47
7.4.2	Cell Change Order procedure initiated on CCCH.....	48
7.5	Measurement Order procedures in Packet Idle mode.....	48
7.5.1	Measurement Order procedures initiated on PCCCH.....	48
7.5.2	Measurement Order procedures initiated on CCCH .....	49
7.6	Packet Pause procedure .....	49
7.6.1	Packet pause procedure initiated on PCCCH.....	49
7.6.1.1	On receipt of a PACKET CHANNEL REQUEST message .....	49
7.6.1.2	On receipt of a PACKET UPLINK ASSIGNMENT message.....	50
7.6.1.3	On receipt of a PACKET ACCESS REJECT message.....	50

7.6.1.4	Abnormal cases .....	50
7.6.2	Packet pause procedure initiated on CCCH .....	50
8	Medium Access Control (MAC) Procedures in Packet Transfer Mode .....	50
8.1	Transfer of RLC data blocks .....	50
8.1.1	Uplink RLC data block transfer .....	51
8.1.1.1	Dynamic allocation uplink RLC data block transfer .....	53
8.1.1.1.1	PACCH operation .....	54
8.1.1.1.2	Resource Reallocation for Uplink .....	54
8.1.1.1.2.1	Abnormal cases .....	55
8.1.1.1.3	Establishment of Downlink TBF .....	55
8.1.1.1.3.1	Abnormal cases .....	56
8.1.1.2	Extended Dynamic Allocation uplink RLC data block transfer .....	56
8.1.1.2.1	Uplink PDCH Allocation .....	56
8.1.1.2.2	PACCH operation .....	57
8.1.1.2.3	Neighbour cell power measurements .....	57
8.1.1.3	Fixed Allocation uplink RLC data block transfer .....	57
8.1.1.3.1	Transfer of RLC/MAC blocks .....	57
8.1.1.3.2	Reallocation for open-ended TBF .....	58
8.1.1.3.2.1	At the beginning of each fixed allocation .....	60
8.1.1.3.2.2	Upon receipt of the reallocation request .....	60
8.1.1.3.2.3	Upon exhaustion of the current allocation .....	60
8.1.1.3.2.4	Ending the TBF .....	60
8.1.1.3.2.5	Abnormal Cases .....	61
8.1.1.3.3	Neighbour cell power measurements .....	61
8.1.1.3.4	PACCH operation .....	61
8.1.1.3.5	Establishment of Downlink TBF .....	62
8.1.1.3.5.1	Abnormal cases .....	62
8.1.1.4	Network initiated release of uplink TBF .....	63
8.1.1.5	Abnormal cases .....	63
8.1.2	Downlink RLC data block transfer .....	64
8.1.2.1	Downlink RLC data block transfer .....	64
8.1.2.1.1	Abnormal cases .....	64
8.1.2.2	Polling for Packet Downlink Ack/Nack .....	65
8.1.2.3	Spare .....	65
8.1.2.4	Resource Reassignment for Downlink .....	65
8.1.2.4.1	Abnormal cases .....	66
8.1.2.5	Establishment of uplink TBF .....	66
8.1.2.5.1	Abnormal cases .....	67
8.1.2.6	Spare .....	68
8.1.2.7	Fixed allocation neighbour cell power measurements .....	68
8.1.2.8	Network initiated abnormal release of downlink TBF .....	68
8.1.3	Concurrent TBF procedures for half duplex operation .....	69
8.1.3.1	Spare .....	69
8.1.3.2	Spare .....	69
8.1.3.2.1	Saving downlink TBF state and initiating uplink TBF .....	69
8.1.3.2.2	Saving downlink TBF state and restoring uplink TBF state .....	69
8.1.3.2.3	Ending downlink TBF and restoring uplink TBF state .....	69
8.1.3.2.4	Saving uplink TBF state and initiating downlink TBF .....	69
8.1.3.2.5	Saving uplink TBF state and restoring downlink TBF state .....	69
8.1.3.2.6	Ending uplink TBF and restoring downlink TBF state .....	69
8.2	Packet PDCH Release .....	70
8.3	Procedure for measurement report sending in Packet Transfer mode .....	70
8.4	Network controlled cell reselection procedure .....	70
8.4.1	Network controlled cell reselection completion .....	71
8.4.2	Abnormal cases .....	71
8.5	Measurement Order procedures in Packet Transfer mode .....	72
8.6	PACKET CONTROL ACKNOWLEDGEMENT .....	72
8.7	Abnormal cases .....	72
8.7.1	Abnormal release with return to CCCH or PCCCH .....	73
8.7.2	Abnormal release with random access .....	73
8.7.3	Abnormal release with system information .....	73

9	Radio Link Control (RLC) procedures in packet transfer mode .....	73
9.1	Procedures and parameters for peer-to-peer operation .....	73
9.1.1	Send state variable V(S) .....	74
9.1.1a	Control send state variable V(CS) .....	74
9.1.2	Acknowledge state variable V(A) .....	74
9.1.3	Acknowledge state array V(B) .....	74
9.1.3.1	Acknowledge state array V(B) for GPRS TBF Mode .....	74
9.1.3.2	Acknowledge State Array V(B) for EGPRS TBF Mode .....	75
9.1.4	Block sequence number BSN .....	76
9.1.4.1	Block sequence number BSN for GPRS TBF .....	76
9.1.4.2	Block sequence number BSN for EGPRS TBF .....	76
9.1.4a	Reduced Block Sequence Number RBSN .....	76
9.1.5	Receive state variable V(R) .....	76
9.1.6	Receive window state variable V(Q) .....	76
9.1.7	Receive state array V(N) .....	76
9.1.7.1	Receive state array V(N) in GPRS TBF .....	76
9.1.7.2	Receive state array V(N) in EGPRS TBF .....	77
9.1.8	Starting sequence number (SSN) and received block bitmap (RBB) .....	77
9.1.8.1	Starting sequence number (SSN) and received block bitmap (RBB) in GPRS TBF .....	77
9.1.8.2	Starting sequence number (SSN) and received block bitmap (RBB) in EGPRS TBF .....	78
9.1.8.2.1	Extended Polling .....	78
9.1.8.2.2	Determination of SSN .....	78
9.1.8.2.3	Generation of the bitmap .....	79
9.1.8.2.4	Interpretation of the bitmap .....	80
9.1.9	Window Size .....	80
9.1.9.1	GPRS .....	80
9.1.9.2	EGPRS .....	80
9.1.10	Compression .....	81
9.1.11	Segmentation of LLC PDUs into RLC data units .....	83
9.1.12	Re-assembly of LLC PDUs from RLC data units .....	84
9.1.12a	Segmentation of RLC/MAC control messages into RLC/MAC control blocks .....	84
9.1.12b	Re-assembly of RLC/MAC control messages from RLC/MAC control blocks .....	85
9.1.13	Priority of LLC PDUs .....	85
9.2	Operation during RLC/MAC control message transfer .....	85
9.3	Operation during RLC data block transfer .....	86
9.3.1	Countdown procedure .....	86
9.3.2	Acknowledged mode operation .....	87
9.3.2.1	Additional functionality in acknowledged EGPRS TBF Mode .....	87
9.3.2.2	Establishment of Temporary Block Flow .....	88
9.3.2.3	Operation of uplink Temporary Block Flow .....	88
9.3.2.4	Release of uplink Temporary Block Flow .....	88
9.3.2.5	Operation of downlink Temporary Block Flow .....	89
9.3.2.6	Release of downlink Temporary Block Flow .....	89
9.3.3	Unacknowledged mode operation .....	90
9.3.3.1	Establishment of Temporary Block Flow .....	90
9.3.3.2	Operation of uplink Temporary Block Flow .....	90
9.3.3.3	Release of uplink Temporary Block Flow .....	90
9.3.3.4	Operation of downlink Temporary Block Flow .....	91
9.3.3.5	Release of downlink Temporary Block Flow .....	91
9.4	Abnormal release cases .....	92
9.4.1	Abnormal release with random access .....	92
9.4.2	Abnormal release with cell reselection .....	92
10	RLC/MAC block structure .....	92
10.0a	Radio block structure .....	92
10.0a.1	GPRS radio block for data transfer .....	92
10.0a.2	EGPRS radio block for data transfer .....	93
10.0a.3	Radio block for control message .....	93
10.1	Spare bits .....	93
10.2	GPRS RLC data blocks .....	93
10.2.1	Downlink RLC data block .....	94
10.2.2	Uplink RLC data block .....	94



10.3	RLC/MAC control blocks .....	94
10.3.1	Downlink RLC/MAC control block .....	95
10.3.2	Uplink RLC/MAC control block .....	95
10.3a	EGPRS RLC data blocks and RLC/MAC headers .....	95
10.3a.1	EGPRS Downlink RLC data block.....	96
10.3a.2	EGPRS Uplink RLC data block.....	96
10.3a.3	EGPRS Downlink RLC/MAC header .....	97
10.3a.3.1	Header type 1: header for MCS-7, MCS-8 and MCS-9 .....	97
10.3a.3.2	Header type 2: header for MCS-6 and MCS-5 .....	97
10.3a.3.3	Header type 3: header for MCS-4, MCS-3, MCS-2 and MCS-1 case.....	97
10.3a.4	EGPRS Uplink RLC/MAC header .....	97
10.3a.4.1	Header type 1: header for MCS-7, MCS-8 and MCS-9 .....	97
10.3a.4.2	Header type 2 : header for MCS-6 and MCS-5.....	98
10.3a.4.3	Header type 3 : header for MCS-4, MCS-3, MCS-2 and MCS-1 .....	98
10.4	Header fields .....	98
10.4.1	Uplink state flag (USF) field.....	98
10.4.2	Retry (R) bit.....	98
10.4.3	Stall indicator (SI) bit .....	98
10.4.4	Supplementary/Polling (S/P) Bit.....	99
10.4.4a	EGPRS Supplementary/Polling (ES/P) Field .....	99
10.4.5	Relative Reserved Block Period (RRBP) field .....	99
10.4.6	Countdown Value (CV) field.....	100
10.4.7	Payload Type field .....	100
10.4.8	Final block indicator (FBI) bit .....	100
10.4.8a	Coding and Puncturing Scheme indicator field (CPS).....	101
10.4.8a.1	Header type 1 .....	101
10.4.8a.2	Header type 2 .....	101
10.4.8a.3	Header type 3 .....	102
10.4.8b	Split Block indicator field (SPB).....	102
10.4.9	TLLI Indicator (TI) bit.....	102
10.4.9a	Address Control (AC) bit.....	102
10.4.9b	Final Segment (FS) bit.....	103
10.4.9c	Radio Transaction Identifier (RTI) field .....	103
10.4.9d	Direction (D) bit .....	103
10.4.10	Temporary Flow Identity (TFI) field .....	103
10.4.10a	Power Reduction (PR) field.....	103
10.4.11	Extension (E) Bit .....	104
10.4.12	Block Sequence Number (BSN) field.....	104
10.4.12a	Reduced Block Sequence Number (RBSN) bit .....	104
10.4.13	More (M) bit .....	105
10.4.14	Length Indicator (LI) field in GPRS TBF mode.....	105
10.4.14a	Length Indicator (LI) field in EGPRS TBF mode .....	105
10.4.15	TLLI field .....	106
10.4.16	RLC data field.....	106
10.4.17	Control message contents field .....	106
10.4.18	Resent Block Bit (RSB).....	106
10.4.19	PFI Indicator (PI) bit.....	106
10.4.20	Packet Flow Identifier(PFI) field .....	106
11	Message functional definitions and contents.....	107
11.1	Handling of erroneous protocol data .....	107
11.1.1	Message classification .....	108
11.1.1.1	Distribution messages .....	108
11.1.1.2	Non-distribution messages .....	108
11.1.1.2.1	Format of the address information.....	109
11.1.2	Error detection mechanism .....	109
11.1.3	Error labels.....	109
11.1.3.1	Generic error labels .....	109
11.1.3.2	'Ignore' error label .....	110
11.1.3.3	'Message escape' error label .....	110
11.1.4	Error detection and order of precedence .....	110
11.1.4.1	Unknown message type.....	111

11.1.4.2	Message not compatible with current protocol state .....	111
11.1.4.3	Syntactically incorrect message .....	111
11.1.4.3.1	Messages with error label: 'Distribution part error' .....	111
11.1.4.3.2	Messages with error label: 'Address information part error' .....	111
11.1.4.3.3	Messages with error label: 'Non-distribution part error' .....	111
11.1.4.3.4	Messages with error label: 'Message escape' .....	112
11.1.4.3.5	Messages with error label: 'Ignore' .....	112
11.1.4.4	Syntactic error in truncated concatenation .....	112
11.1.4.5	Exceptions .....	112
11.2	RLC/MAC control messages .....	112
11.2.0	Message format .....	113
11.2.0.1	Downlink RLC/MAC messages .....	113
11.2.0.2	Uplink RLC/MAC messages .....	114
11.2.1	Packet Access Reject .....	115
11.2.2	Packet Control Acknowledgement .....	116
11.2.3	Packet Cell Change Failure .....	117
11.2.4	Packet Cell Change Order .....	118
11.2.5	Packet Channel Request .....	120
11.2.5a	EGPRS Packet Channel Request .....	121
11.2.6	Packet Downlink Ack/Nack .....	121
11.2.6a	EGPRS Packet Downlink Ack/Nack .....	123
11.2.7	Packet Downlink Assignment .....	124
11.2.8	Packet Downlink Dummy Control Block .....	127
11.2.8a	Void .....	127
11.2.8b	Packet Uplink Dummy Control Block .....	127
11.2.9	Packet Measurement Report .....	128
11.2.9a	Void .....	130
11.2.9b	Packet Measurement Order .....	130
11.2.9c	Packet Mobile TBF Status .....	139
11.2.9d	PACKET ENHANCED MEASUREMENT REPORT .....	140
11.2.10	Packet Paging Request .....	141
11.2.11	Packet PDCH Release .....	143
11.2.12	Packet Polling Request .....	143
11.2.13	Packet Power Control/Timing Advance .....	144
11.2.14	Packet PRACH Parameters .....	145
11.2.15	Packet Queueing Notification .....	146
11.2.16	Packet Resource Request .....	146
11.2.17	Packet PSI Status .....	148
11.2.18	Packet System Information Type 1 .....	150
11.2.19	Packet System Information Type 2 .....	152
11.2.19.1	Reference Frequency Lists in PSI2 .....	155
11.2.19.2	Cell Allocation in PSI2 .....	155
11.2.19.3	GPRS Mobile Allocation in PSI2 .....	155
11.2.19.4	PCCCH Description .....	155
11.2.19.5	Abnormal cases .....	155
11.2.20	Packet System Information Type 3 .....	155
11.2.21	Packet System Information Type 3 bis .....	162
11.2.22	Packet System Information Type 4 .....	165
11.2.23	Packet System Information Type 5 .....	166
11.2.23a	Packet System Information Type 6 .....	170
11.2.23b	Packet System Information Type 7 .....	171
11.2.24	Packet System Information Type 8 .....	171
11.2.25	Packet System Information 13 .....	172
11.2.26	Packet TBF Release .....	175
11.2.27	Spare .....	176
11.2.28	Packet Uplink Ack/Nack .....	176
11.2.29	Packet Uplink Assignment .....	179
11.2.30	Spare .....	185
11.2.30a	Packet Pause .....	185
11.2.31	Packet Timeslot Reconfigure .....	185
11.2.32	Additional MS Radio Access Capabilities .....	191

STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 301 349 V8.4.1:2005  
<http://standards.iteh.ai/catalog/standards/sist/dd8f053c-42ad-4b84-a000-117727242005/sist-en-301-349-v8-4-1-2005>

12	Information element coding .....	191
12.1	Overview .....	191
12.2	Spare.....	191
12.3	Ack/Nack Description .....	191
12.3.1	EGPRS Ack/Nack Description .....	192
12.4	ALLOCATION_BITMAP .....	194
12.5	EGPRS .....	194
12.5.1	EGPRS Channel Quality Report.....	194
12.5.2	EGPRS Window Size .....	195
12.5.3	EGPRS BEP Link Quality Measurements IE .....	196
12.5.4	EGPRS Timeslot Link Quality Measurements IE .....	196
12.6	Spare.....	198
12.7	Channel Request Description .....	198
12.8	Frequency Parameters .....	198
12.8.1	Abnormal cases.....	200
12.9	Global Power Control Parameters .....	200
12.10	Global TFI.....	201
12.10a	GPRS Mobile Allocation.....	201
12.10a.1	Abnormal cases.....	202
12.10b	Spare.....	203
12.10c	Spare.....	203
12.10d	EGPRS Modulation and coding Scheme description .....	203
12.10e	RESEGMENT description .....	203
12.11	Packet Request Reference .....	203
12.12	Packet Timing Advance .....	204
12.12a	Global Packet Timing Advance.....	204
12.12b	Packet Extended Timing Advance.....	205
12.13	Power Control Parameters.....	205
12.14	PRACH Control Parameters.....	206
12.15	Temporary Flow Identity (TFI).....	208
12.16	Temporary Logical Link Identity (TLLI).....	208
12.17	Temporary Queueing Identifier (TQI).....	208
12.18	TIMESLOT_ALLOCATION.....	208
12.19	TS_OVERRIDE.....	209
12.20	PAGE_MODE.....	209
12.21	Starting framenummer Description .....	209
12.21.1	Absolute framenummer Encoding .....	209
12.21.2	Relative framenummer Encoding .....	210
12.22	Spare.....	210
12.23	Cell Identification.....	210
12.24	GPRS Cell Options.....	211
12.25	PCCCH Organization Parameters .....	213
12.26	Extension Bits IE.....	213
12.27	Non GPRS Cell Options IE .....	213
12.28	LSA Parameters.....	214
12.29	COMPACT reduced MA.....	214
13	Timers and counters .....	215
13.1	Timers on the Mobile Station side.....	215
13.2	Timers on the network side .....	219
13.3	Counters on the Mobile Station side .....	220
13.4	Counters on the Network side .....	220

<b>Annex A (informative):</b>	<b>Bibliography.....</b>	<b>221</b>
<b>Annex B (informative):</b>	<b>RLC data block encoding.....</b>	<b>222</b>
B.1	Example 1.....	222
B.2	Example 2.....	222
B.3	Example 3.....	223
B.4	Example 4.....	223
B.5	Example 5.....	224
B.6	Example 6.....	224
B.7	Example 7.....	225
<b>Annex C (informative):</b>	<b>Message Sequence Diagrams .....</b>	<b>226</b>
<b>Annex D (informative):</b>	<b>Examples of Fixed Allocation Timeslot Assignment.....</b>	<b>227</b>
<b>Annex E (informative):</b>	<b>Repeated Fixed Allocations.....</b>	<b>231</b>
<b>Annex F (informative):</b>	<b>Examples of Countdown procedure operation.....</b>	<b>233</b>
F.1	Example 1.....	233
F.2	Example 2.....	233
F.3	Example 3.....	234
<b>Annex G (informative):</b>	<b>Handling of erroneous protocol data, examples.....</b>	<b>235</b>
G.1	Application of error labels.....	235
G.2	Application of the 'Message escape' error label.....	235
G.3	Application of truncated concatenation including 'padding bits'.....	236
G.4	Message extension using 'padding bits'.....	237
<b>Annex H (informative):</b>	<b>EGPRS RLC Window Sizes.....</b>	<b>238</b>
<b>Annex I (informative):</b>	<b>Document change History .....</b>	<b>239</b>
History .....		243

iTech STANDARD PREVIEW  
(standards.iteh.ai)

SIST EN 301 349 V8.4.1:2005  
<https://standards.iteh.ai/catalog/standards/sist/dd8f053c-42ad-4b84-a000-ced5772cabad/sist-en-301-349-v8-4-1-2005>

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Special Mobile Group (SMG).

The present document specifies the procedures used at the radio interface (Reference Point Um, see GSM 04.02) for the General Packet Radio Service (GPRS) Medium Access Control /Radio Link Control (MAC/RLC) layer within the digital cellular telecommunications system (Phase 2+).

The contents of the present document are subject to continuing work within SMG and may change following formal SMG approval. Should SMG modify the contents of the present document it will then be re-submitted for OAP with an identifying change of release date and an increase in version number as follows:

Version 8.x.y

where:

- 8 indicates GSM Release 1999 of Phase 2+
- x the second digit is incremented for changes of substance, i.e. technical enhancements, corrections, updates, etc.
- y the third digit is incremented when editorial only changes have been incorporated in the specification.

### National transposition dates

Date of adoption of this EN:	29 September 2000
Date of latest announcement of this EN (doa):	31 December 2000
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# 1 Scope

The present document specifies the procedures used at the radio interface (Reference Point Um, see GSM 04.02) for the General Packet Radio Service (GPRS) Medium Access Control /Radio Link Control (MAC/RLC) layer.

When the notations for "further study" or "FS" or "FFS" are present in the present document they mean that the indicated text is not a normative portion of the present document.

The present document is applicable to the following GPRS Um functional layers:

- Radio Link Control functions;
- Medium Access Control functions; and
- Physical Link Control functions.

The procedures described in the present document are for the RLC/MAC functions of the GPRS radio interface (Um) when operating on a Packet Data Channel (PDCH).

The present document provides the overall description for RLC/MAC layer functions of the general Packet Radio Service (GPRS and EGPRS) radio interface Um. Within the present document the term GPRS refers to GPRS and EGPRS unless explicitly stated otherwise.

GSM 03.64 contains an overview of the GPRS radio interface (Um).

GSM 04.03 and GSM 04.04 contains the definition of the control channels used in the present document.

GSM 04.07 contains a description in general terms of the structured functions and procedures of this protocol and the relationship of this protocol with other layers and entities.

GSM 04.08 contains the definition of GPRS RLC/MAC procedures when operating on the Common Control Channel (CCCH).

GSM 04.64 contains functional procedures for the Logical Link Control (LLC) layer.

## Application to interface structure

The RLC/MAC procedures apply to the interface structures defined in GSM 04.03. They use the functions and services provided by layer 1 defined in GSM 04.04. GSM 04.07 gives the general description of layer 3 including procedures, messages format and error handling.

## Test procedures

Test procedures of the GSM radio interface signalling are described in GSM 11.10 and GSM 11.2x series.

## Use of logical control channels

The logical control channels are defined in GSM 05.02. Three similar sets of logical channels are defined.

- The first set consists of the logical channels:
  - Broadcast Control Channel (BCCH): downlink only, used to broadcast Cell specific information;
  - Paging Channel (PCH): downlink only, used to send page requests to Mobile Stations (MSs);
  - Random Access Channel (RACH): uplink only, used to request GPRS resources or a Dedicated Control Channel;
  - Access Grant Channel (AGCH): downlink only, used to allocate GPRS resources or a Dedicated Control Channel.
- The second set consists of the logical channels:
  - Packet Broadcast Control Channel (PBCCH): downlink only, used to broadcast Cell specific information;

- Packet Paging Channel (PPCH): downlink only, used to send page requests to Mobile Stations (MSs);
- Packet Random Access Channel (PRACH): uplink only, used to request GPRS resources;
- Packet Access Grant Channel (PAGCH): downlink only, used to allocate GPRS resources;
- Packet Associated Control Channel (PACCH): bi-directional, associated with a Temporary Block Flow (TBF);
- Packet Timing advance control channel uplink (PTCCH/U): used to transmit random access bursts to allow estimation of the timing advance for one MS in transfer state;
- Packet Timing advance control channel downlink (PTCCH/D): used to transmit timing advance updates for several MS. One PTCCH/D is paired with several PTCCH/U's.
- The third set consists of the logical channels (COMPACT control channels):
  - COMPACT Packet Broadcast Control Channel (CPBCCCH): downlink only, used to broadcast Cell specific information; This channel is used to broadcast the same pieces of information as the PBCCH, but has a different physical structure (see GSM 05.02); In the remainder of this specification PBCCH shall be interpreted as PBCCH and CPBCCCH unless specifically mentioned to be otherwise;
  - COMPACT Packet Paging Channel (CPPCH): downlink only, used to send page requests to Mobile Stations (MSs) on a COMPACT control channel; In the remainder of this specification PPCH shall be interpreted as PPCH and CPPCH unless specifically mentioned to be otherwise;
  - COMPACT Packet Random Access Channel (CPRACH): uplink only, used to request GPRS resources on a COMPACT control channel; In the remainder of this specification PRACH shall be interpreted as PRACH and CPRACH unless specifically mentioned to be otherwise;
  - COMPACT Packet Access Grant Channel (CPAGCH): downlink only, used to allocate GPRS resources on a COMPACT control channel; In the remainder of this specification PAGCH shall be interpreted as PAGCH and CPAGCH unless specifically mentioned to be otherwise;
  - Packet Associated Control Channel (PACCH): see above;
  - Packet Timing advance control channel uplink (PTCCH/U): see above;
  - Packet Timing advance control channel downlink (PTCCH/D): see above.

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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.
- For this Release 1999 document, references to GSM documents are for Release 1999 versions (version 8.x.y).

[1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".

[2] GSM 02.60: "Digital cellular telecommunications system (Phase 2+); Stage 1 Service Description of the General Packet Radio Service (GPRS)".