



SLOVENSKI STANDARD

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8 [[]HJb]`WV] b]`hY`Y_ca i b]_ UW`g_]`g]ghYa `fZUnU&ZL!`Gd`cýbUfUX]`g_Ug]cf]Hj `g
dU_Yh]fUb]a]`dcXUh_]`f] DF GL!`A cV]`bUdcghU`U`fA GL`É`j a Ygb]_`g]ghYa UVUnbY
dcghU`Y`f6 GGL`_`fa]`Yb`Y`fUX]`g_Y`dcj YnUj Y#gfYXb]`Xcg]cd

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**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 8.3.1 Release 1999)**

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GSM®
GLOBAL SYSTEM FOR
MOBILE COMMUNICATIONS

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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 the present document:	1 September 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 this TS 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.

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)".
- [3] GSM 03.03: "Digital cellular telecommunications system (Phase 2+); Numbering, addressing and identification".