



TECHNICAL SPECIFICATION

**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
5G;
Mobile radio interface signalling layer 3;
General Aspects
(3GPP TS 24.007 version 19.5.0 Release 19)**



Reference

RTS/TSGC-0124007vj50

Keywords

5G,GSM,LTE,UMTS

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 - APE 7112B
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Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The present document defines the architecture of layer 3 and its sublayers on the GSM Um interface, i.e. the interface between Mobile Station and network within the 3GPP system.

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

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1 Scope

The present document defines the principal architecture of layer 3 and its sublayers on the GSM Um interface, i.e. the interface between Mobile Station (MS) and network; for the CM sublayer, the description is restricted to paradigmatic examples, call control, supplementary services, and short message services for non-GPRS services. It also defines the basic message format and error handling applied by the layer 3 protocols.

For CTS services, the present document defines the principal architecture of layer 3 on the GSM Um* interface, i.e. the interface between a CTS capable Mobile Station (CTS-MS) and a Fixed Part (FP).

The corresponding protocols are defined in other Technical Specifications, see clause 4.3.4.

For non-GPRS services the communication between sublayers and adjacent layers and the services provided by the sublayers are distributed by use of abstract service primitives. But only externally observable behaviour resulting from the description is normatively prescribed by the present document.

For GPRS services in addition the local information transfer and stimuli sent between sublayers is informatively included within Annex C of in the present document.

This document also defines the principal architecture of the EPS NAS and 5GS NAS layer 3 protocol and their sublayers, including the message format applied by layer 3.

In the present document MS is also used as a synonym for UE.

Descriptions in clauses 6 to 10 are not maintained actively.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] GSM 01.02(R97): "Digital cellular telecommunications system (Phase 2+); General description of a GSM Public Land Mobile Network (PLMN)".
- [1a] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 23.101: "General UMTS Architecture".
- [3] 3GPP TS 44.001: "Mobile Station - Base Station System (MS - BSS) interface; General aspects and principles".
- [3a] 3GPP TS 23.060: "General Packet Radio Service (GPRS) description; Stage 2".
- [3b] GSM 03.56(R98): "Digital cellular telecommunications system (Phase 2+); GSM Cordless Telephony System (CTS), Phase 1; CTS Architecture Description; Stage 2".
- [3c] 3GPP TS 23.271: "Functional stage 2 description of location services".
- [4] 3GPP TS 44.005: "Data Link (DL) layer; General aspects".
- [5] 3GPP TS 44.006: "Mobile Station - Base Station System (MS - BSS) interface; Data Link (DL) layer specification".

- [5a] 3GPP TS 44.014: "Individual equipment type requirements and interworking; Special conformance testing functions".
- [6] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification Core Network Protocols-Stage 3".
- [6a] 3GPP TS 23.108: "Mobile radio interface Layer 3 specification Core Network Protocols Stage 2 (structured procedures)".
- [6b] 3GPP TS 44.018: "Mobile radio interface layer 3 specification; Radio Resource Control Protocol".
- [7] 3GPP TS 24.010: "Mobile radio interface Layer 3; Supplementary services specification; General aspects".
- [8] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [8a] 3GPP TS 44.071: "Location Services (LCS); Mobile radio interface layer 3 LCS specification".
- [9] 3GPP TS 24.080: "Mobile radio Layer 3 supplementary services specification; Formats and coding".
- [10] 3GPP TS 24.081: "Line identification supplementary services; Stage 3".
- [10a] 3GPP TS 44.060: "General Packet Radio Services (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol".
- [10b] 3GPP TS 44.056: "GSM Cordless Telephony System (CTS), phase 1; CTS radio interface Layer 3 specification".
- [11] 3GPP TS 24.082: "Call Forwarding (CF) supplementary services - Stage 3".
- [11a] 3GPP TS 44.064: "General Packet Radio Service (GPRS); Mobile Station - Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) layer specification".
- [12] 3GPP TS 24.083: "Call Waiting (CW) and Call Hold (HOLD) supplementary services; Stage 3".
- [12a] 3GPP TS 44.065: "General Packet Radio Service (GPRS); Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCCP)".
- [13] 3GPP TS 24.084: "MultiParty (MPTY) supplementary services; Stage 3".
- [14] 3GPP TS 24.085: "Closed User Group (CUG) supplementary services; Stage 3".
- [15] 3GPP TS 24.086: "Advice of Charge (AoC) supplementary services; Stage 3".
- [16] 3GPP TS 24.088: "Call Barring (CB) supplementary services; Stage 3".
- [17] 3GPP TS 24.090: "Unstructured Supplementary Service Data (USSD) - Stage 3".
- [17a] 3GPP TS 34.109: "Terminal logical test interface; Special conformance testing functions".
- [18] ITU-T Recommendation X.200: "Information technology - Open Systems Interconnection - Basic Reference Model: The basic model".
- [19] 3GPP TS 44.068: "Group Call Control (GCC) Protocol".
- [20] 3GPP TS 23.110: "UMTS Access Stratum Services and Functions".
- [21] 3GPP TS 24.030: "Location Services (LCS); Supplementary service operations – Stage 3".
- [22] 3GPP TS 23.251: "Network Sharing; Architecture and functional description".
- [23] 3GPP TS 25.413: "UTRAN Iu interface RANAP signalling".
- [24] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC) protocol specification".