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Digital cellular telecommunications system (Phase 2+) (GSM); Mobile radio interface signalling layer 3; General aspects (GSM 04.07 version 5.2.1)

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**ICS:**

33.070.50	Globalni sistem za mobilno telekomunikacijo (GSM)	Global System for Mobile Communication (GSM)
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## Foreword

This second edition European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) of the European Telecommunications Standards Institute (ETSI).

This ETS 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 digital cellular telecommunications system (Phase 2+).

The specification from which this ETS has been derived was originally based on CEPT documentation, hence the presentation of this ETS may not be entirely in accordance with the ETSI drafting rules.

Transposition dates	
Date of adoption of this ETS:	5 December 1997
Date of latest announcement of this ETS (doa):	31 March 1998
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 September 1998
Date of withdrawal of any conflicting National Standard (dow):	30 September 1998

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## 1 Scope

This European Telecommunication Standard (ETS) 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. It also defines the basic message format and error handling applied by the layer 3 protocols.

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

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 this Technical Specification.

## 2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

- [1] GSM 01.04 (ETR 350): "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] GSM 03.01: "Digital cellular telecommunications system (Phase 2+); Network functions".
- [3] GSM 04.01: "Digital cellular telecommunications system; Mobile Station - Base Station System (MS - BSS) interface General aspects and principles".
- [4] GSM 04.05 (ETS 300 937): "Digital cellular telecommunications system; Data Link (DL) layer General aspects".
- [5] GSM 04.06 (ETS 300 938): "Digital cellular telecommunications system; Mobile Station - Base Station System (MS - BSS) interface Data Link (DL) layer specification".
- [6] GSM 04.08 (ETS 300 940): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".
- [7] GSM 04.10 (ETS 300 941): "Digital cellular telecommunications system; Mobile radio interface layer 3 Supplementary services specification General aspects".
- [8] GSM 04.11 (ETS 300 942): "Digital cellular telecommunications system (Phase 2+); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [9] GSM 04.80 (ETS 300 950): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 supplementary services specification Formats and coding".
- [10] GSM 04.81 (ETS 300 951): "Digital cellular telecommunications system; Line identification supplementary services - Stage 3".
- [11] GSM 04.82 (ETS 300 952): "Digital cellular telecommunications system; Call Forwarding (CF) supplementary services - Stage 3".
- [12] GSM 04.83 (ETS 300 953): "Digital cellular telecommunications system; Call Waiting (CW) and Call Hold (HOLD) supplementary services - Stage 3".



This Technical Specification does not consider the distribution of signalling functions among the different network equipments. The signalling functions are described between two systems which represent the MS side and the network side of the radio interface of layer 3. Only the functions in the network for signalling communication with one MS is considered.

## 4.2 Applicability of functional blocks

Not for all functional blocks listed in subclause 4.1, support in the MS or in the network is mandatory:

- Support of Group Call Control is optional in the MS and in the network.
- Support of Broadcast Call Control is optional in the MS and in the network.
- Connection Management of Packet Data on Signalling channels. is optional in the MS and in the network.

Further conditions and constraints are defined in other Technical Specifications.

## 4.3 Technique of description

Signalling layer 3 and its sub-layers are specified by:

- their service specification, see subclause 4.3.1;
- their protocol specification, see subclause 4.3.3;
- the specification of functions, see clause 5.

### 4.3.1 Service description

The services of signalling layer 3 and its sublayers are described in terms of:

- services provided to upper (sub-)layers at the service access points;
- services assumed from lower (sub-)layers at the service access points;

Layer 3 and its supporting lower layers provide the Mobile Network Signalling (MNS) Service to the upper layers.

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The service provided/assumed at the service access points are described by means of abstract service primitives and parameters as recommended in CCITT Recommendation X.200.

### 4.3.2 Abstract service primitives

The abstract service primitives consist of requests, responses, indications and confirmations. The general syntax of a primitive is specified in GSM 04.01.

### 4.3.3 Protocols and peer-to-peer communication

By use of the services provided by lower (sub-)layers, peer entities in a (sub-)layer in the MS and the network exchange information. Exchange of information between two peer entities is performed according to the corresponding (sub-)layer protocols. A protocol is a set of rules and formats by which the information (control information and user data) is exchanged between the two peers. The information is exchanged by use of messages which are defined in the protocol. (Therefore, the messages are also called Protocol Data Units, PDUs).

There is a protocol of the RR sublayer, a protocol of the MM sublayer, and several protocols of the CM sublayer: for each functional block of the CM sublayer as defined in subclause 4.1 there is one protocol. The CM protocols are specified in the Technical Specifications identified in subclause 4.3.4.