

ETSI TS 144 001 V4.0.0 (2001-03)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Mobile Station - Base Station System (MS - BSS)
Interface General Aspects and Principles
(3GPP TS 44.001 version 4.0.0 Release 4)**



Reference

RTS/TSGN-0144001Uv4

Keywords

GSM

ETSI

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Foreword

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0.1 Scope

The present document describes the general aspects and principles relating to the Technical Specifications for the GSM MS-BSS interface.

0.2 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 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] GSM 02.30: "Digital cellular telecommunications system (Phase 2+); Man-Machine Interface (MMI) of the Mobile Station (MS)".
- [3] GSM 04.02: "Digital cellular telecommunications system (Phase 2+); GSM Public Land Mobile Network (PLMN) access reference configuration".
- [4] GSM 04.03: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Station System (MS - BSS) interface Channel structures and access capabilities".
- [5] GSM 04.04: "Digital cellular telecommunications system (Phase 2+); layer 1 General requirements".
- [6] GSM 04.05: "Digital cellular telecommunications system (Phase 2+); Data Link (DL) layer General aspects".
- [7] GSM 04.06: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Station System (MS - BSS) interface Data Link (DL) layer specification".
- [8] GSM 04.07: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface signalling layer 3 General aspects".
- [9] GSM 04.08: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".
- [10] GSM 04.10: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 Supplementary services specification General aspects".
- [11] GSM 04.11: "Digital cellular telecommunications system (Phase 2+); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [12] GSM 04.12: "Digital cellular telecommunications system (Phase 2+); Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface".
- [13] CCITT Recommendation X.200: "Reference Model of Open Systems Interconnection for CCITT Applications".
- [14] CCITT Recommendation X.210: "Open Systems Interconnection layer service definition conventions".

0.3 Definitions and abbreviations

Abbreviations used in the present document are listed in GSM 01.04.

1 General

1.1

A GSM PLMN supports a wide range of services which a user accesses by a standard set of interfaces at a mobile station (MS). The mobile station is connected to the PLMN fixed infrastructure via a radio path to a base station, as shown in figure 1.

1.2

The MS-BSS interface on this radio path is specified in the 04-series of Technical Specifications in such a way as to permit user and network technologies and configurations to evolve separately.

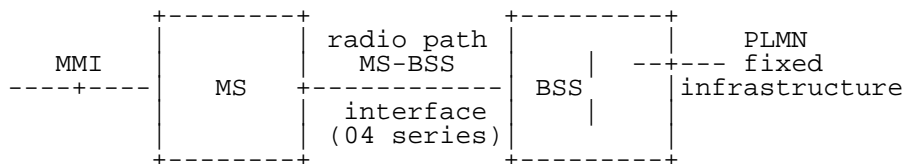


Figure 1: Basic interfaces for user access for a GSM PLMN

1.3

The principles and procedures for the man-machine interface (MMI) to the MS are described in Technical Specification GSM 02.30. The user may also use standard terminal interfaces within the MS. The reference configuration for the access is described in Technical Specification GSM 04.02.

2 Interface applications

Figure 2 shows some examples of the application of GSM MS-BSS interfaces. The following cases are shown:

- i) access of simple handportable or vehicle mounted MSs;
- ii) access of an MS with multiple terminal equipment installation;
- iii) access of a mobile PBX or LAN;

In addition, the figure identifies internetwork interfaces for connections to:

- iv) land-line ISDN networks;
- v) dedicated service networks.

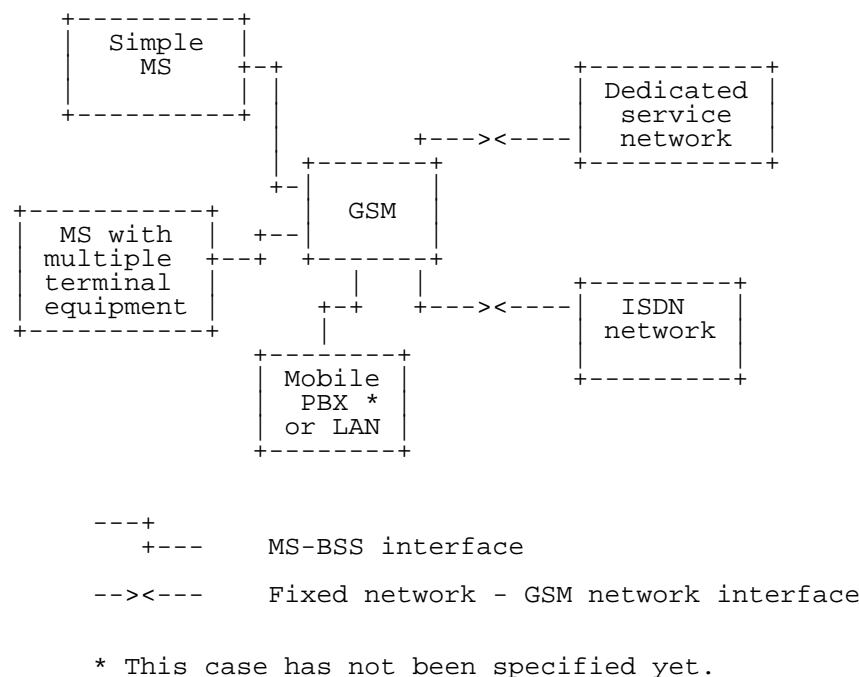


Figure 2: Examples of GSM interfaces

3 Interface technical specification objectives

MS-BSS interface Technical Specifications should allow:

- i) different types of mobile stations and terminal equipment to use the same standard interface;
- ii) portability of MSs within the system area of the GSM system;
- iii) separate evolution of both mobile stations and network equipment technologies and configurations;
- iv) calls to a terminal using the same code (call number) no matter in what country it is actually located;
- v) connections of an MS to the ISDN network so that only the radio channel capacity and the ISDN protocol are limiting factors.

4 Interface characteristics

The MS-BSS interface is specified by a comprehensive set of characteristics, including:

- i) channel structures and access capabilities;
- ii) user-network (MS-BSS) protocols;
- iii) maintenance and operation characteristics;
- iv) performance characteristics;
- v) service characteristics.

5 Interface capabilities

In addition to the multiservice capability, the GSM MS-BSS interface may allow for capabilities such as the following:

- i) multidrop and other multiple terminal arrangements;
- ii) choice of information bit rate, circuit or packet switching mode, layer 2 coding method, etc..., on a call-by-call or other basis (e.g. semipermanent, or subscription time option), over the same interface according to the user's need;
- iii) capability for compatibility checking in order to check whether calling and called terminals can communicate with each other.

6 Technical Specifications on GSM MS-BSS interfaces

6.1

The reference configurations for the GSM MS-BSS interface define the terminology for various reference points. Technical Specification GSM 04.02 contains the GSM PLMN access reference configuration.

6.2

Technical Specification GSM 04.03 defines the channel structures and access capabilities for the MS-BSS interface. A distinction is necessary between the logical channel structure supported by the interface and the access capability supported by the radio path of the system.

6.3

The MS-BSS interface as defined in Technical Specifications GSM 04.04 through 04.12 is applicable to a wide range of situations.

7 Protocol modelling principles

7.1

The signalling protocols on the MS-BSS Interface are specified using the concepts of the reference model of Open System Interconnection (OSI) given in CCITT Recommendations X.200 and X.210.

7.2

The basic structuring technique in the OSI reference model is layering. According to this technique, communication among application processes is viewed as being logically partitioned into an ordered set of layers represented in a vertical sequence as shown in figure 3.

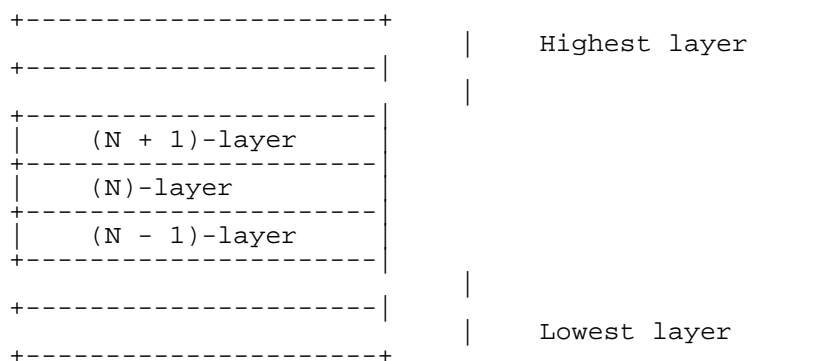


Figure 3: Layering

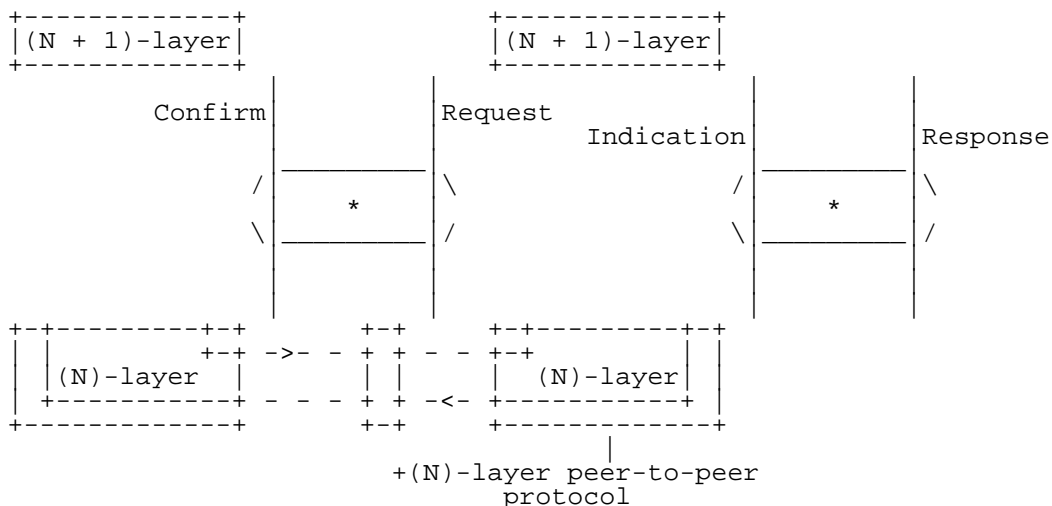


Figure 5: Primitive action sequence for peer-to-peer communication

The REQUEST primitive type is used when a higher layer is requesting a service from the next lower layer.

The INDICATION primitive type is used by a layer providing a service to notify the next higher layer of activities related to the primitive type REQUEST.

The RESPONSE primitive type is used by a layer to acknowledge receipt, from a lower layer, of the primitive type INDICATION.

The CONFIRM primitive type is used by the layer providing the requested service to confirm that the activity has been completed.

Annex A (informative): Change Request History

| Change history | | | | | |
|-----------------------|------------------|----------------|-------------------------|--------------------|-------------------------|
| SMG No. | TDoc. No. | CR. No. | Section affected | New version | Subject/Comments |
| SMG#07 | | | | 4.0.4 | Phase 2 version |
| SMG#20 | | | | 5.0.0 | Release 1996 version |
| SMG#27 | | | | 6.0.0 | Release 1997 version |
| SMG#29 | | | | 7.0.0 | Release 1998 version |
| SMG#31 | | | | 8.0.0 | Release 1999 version |
| CN#11 | | | | 4.0.0 | Release 4 version |

History

| Document history | | |
|-------------------------|------------|-------------|
| V4.0.0 | March 2001 | Publication |
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