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**European digital cellular telecommunications system (Phase 2);
Base Station System - Mobile-services Switching Centre
(BSS - MSC) interface
Layer 1 specification
(GSM 08.04)**

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Contents

Foreword	5
1 Scope	7
2 Normative references	7
3 Definitions and abbreviations	7
4 Layer 1 Specification	7
History.....	9

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Foreword

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

This ETS defines the layer 1 specification for the Base Station System (BSS) to Mobile-services Switching Centre (MSC) interface. This ETS corresponds to GSM technical specification GSM 08.04 version 4.0.3.

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/PNE rules.

Reference is made within this ETS to GSM-TSs (NOTE).

NOTE: TC-SMG has produced documents which give the technical specifications for the implementation of the European digital cellular telecommunications system. Historically, these documents have been identified as GSM Technical Specifications (GSM-TSs). These TSs may have subsequently become I-ETTs (Phase 1), or ETSS (Phase 2), whilst others may become ETSI Technical Reports (ETRs). GSM-TSs are, for editorial reasons, still referred to in GSM ETSS.

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1 Scope

This Technical Specification defines the structure of the physical layer (layer 1) of the BSS-MSC interface for supporting traffic channels. Use of the physical layer for supporting Signalling System No.7 signalling links is covered in Technical Specification GSM 08.06.

The physical layer is the lowest layer in the OSI Reference Model and it supports all functions required for transmission of bit streams on the physical medium.

For this Technical Specification only digital transmission will be considered, the use of analogue transmission is a national concern.

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 100): "European digital cellular telecommunications system (Phase 2); Abbreviations and acronyms".
- [2] CCITT Recommendation G.705: "Characteristics required to terminate digital links on a digital exchange".
- [3] CCITT Recommendation G.709: "Synchronous multiplexing structure".
- [4] CCITT Recommendation G.711: "Pulse code modulation (PCM) of voice frequencies".
- [5] CCITT Recommendation G.732: "Characteristics of primary PCM multiplex equipment operating at 2048 kbit/s".
- [6] GSM 08.06 (prETS 300 589): "European digital cellular telecommunications system (Phase 2); Signalling transport mechanism specification for the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface".

3 Definitions and abbreviations

Abbreviations used in this specification are listed in GSM 01.04

4 Layer 1 Specification

All CCITT recommendations referred to are Blue Book.

Layer 1 shall utilise digital transmission at a rate of 2048 kbit/sec with a frame structure of 32 * 64kbit/sec time slots, as specified in CCITT Recommendation G.705 section 3.

Therefore the physical/electrical characteristics are defined in CCITT Recommendation G.703.

The functional characteristics are defined in CCITT Recommendation G.732 section 2 and 3.

Fault conditions should be treated in accordance with CCITT Recommendation G.732 section 4.

Speech encoding shall be the A-law as defined in CCITT Recommendation G.711.

The idle pattern must be transmitted on every timeslot that is not assigned to a channel, and to every timeslot of a channel that is not allocated to a call. The idle pattern shall be 01010100.

Synchronisation at the BSS for the transmitted 2048 kbit/sec bit stream shall be derived from the received 2048 kbit/sec bit stream.

Data encoding is covered in Technical Specification GSM 08.20.

NOTE: A predetermined number of the 64kbit/sec time slots may be used for signalling, to one or more base station systems.

History

Document history	
September 1994	First Edition
November 1995	Converted into Adobe Acrobat Portable Document Format (PDF)