



SLOVENSKI STANDARD SIST ETS 300 579 E2:2003

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European digital cellular telecommunications system (Phase 2); Radio subsystem
synchronization (GSM 05.10)

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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 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 requirements for synchronisation of the Radio sub-system within the European digital cellular telecommunications system (Phase 2). This ETS does not define the synchronisation algorithms implemented in the Mobile Station (MS) and Base Station System (BSS).

This ETS correspond to GSM technical specification, GSM 05.10 version 4.5.0.

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 Technical Specifications (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.

Proposed transposition dates	
Date of adoption of this ETS:	30 July 1995
Date of latest announcement of this ETS (doa):	31 October 1995
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	30 April 1996
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1.1 Scope

This technical specification defines the requirements for synchronization on the GSM radio sub-system. (However, it does not define the synchronization algorithms to be used in the BS and MS. These are up to the manufacturer to specify.)

1.2 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 telecommunication system (Phase 2); Definitions, abbreviations and acronyms".
- [2] GSM 04.08 (ETS 300 557): "European digital cellular telecommunication system (Phase 2); Mobile radio interface layer 3 specification".
- [3] GSM 05.02 (ETS 300 574): "European digital cellular telecommunication system (Phase 2); Multiplexing and multiple access on the radio path".
- [4] GSM 05.05 (ETS 300 577): "European digital cellular telecommunication system (Phase 2); Radio transmission and reception".
- [5] GSM 05.08 (ETS 300 578): "European digital cellular telecommunication system (Phase 2); Radio subsystem link control".
- [6] GSM 03.30 (ETR XXX): "European digital cellular telecommunication system (Phase 2); Radio network planning aspects".

1.3 Definitions and abbreviations

In addition to those below, definitions and abbreviations used in this specification are listed in GSM 01.04.

- Timing Advance: A signal sent by the BS to the MS which the MS uses to advance its timings of transmissions to the BS so as to compensate for propagation delay
- Quarter bit number: The timing of quarter bit periods (12/13 μ s) within a timeslot
- Timeslot number: The timing of timeslots within a TDMA frame
- TDMA frame number: The count of TDMA frames relative to an arbitrary start point
- Current Serving BS: The BS on one of whose channels (TCH, DCCH or CCCH) the MS is currently operating
- Timebase counters: A set of counters which determine the timing state of signals transmitted by a BS or MS
- MS timing offset: The delay of the received signal relative to the expected signal from an MS at zero distance under static channel conditions with zero timing advance. This is accurate to ± 1 bit, and reported once per SACCH or after a RACH as required (ie at the same rate as timing advance). For example, for an MS with a round trip propagation delay of P bits, but with a timing advance of T bits, the reported timing offset will be P-T quantized to the nearest bit.