SLOVENSKI STANDARD
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Digitalni celiļ ni telekomunikacijski sistem (faza 2+) ï Sinhronizacija radijskega podsistema (GSM 05.10, razliļ ica 5.1.1)

Digital cellular telecommunications system (Phase 2+) (GSM); Radio subsystem synchronization (GSM 05.10 version 5.1.1)

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GLOBAL SYSTEM FOR MOBILE COMMUNICATIONS

Digital cellular telecommunications system (Phase 2+); Radio subsystem synchronization (GSM 05.10 version 5.1.1)

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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 synchronization on the GSM radio sub-system of the digital mobile cellular and personal communication systems operating in the 900 MHz and 1 800 MHz band (GSM 900 and DCS 1 800).

This ETS is a GSM technical specification version 5, which incorporates GSM Phase 2+ enhancements/features to the version 4 GSM technical specification. The ETS from which this Phase 2+ ETS has evolved is Phase 2 GSM ETS 300 579 Edition 6 (GSM 05.10 version 4.9.0).

The contents of this ETS is subject to continuing work within TC-SMG and may change following formal TC-SMG approval. Should TC-SMG modify the contents of this ETS, it will be resubmitted for OAP by ETSI with an identifying change of release date and an increase in version number as follows:

Version 5.x.y

where:

- y the third digit is incremented when editorial only changes have been incorporated in the specification;

- x the second digit is incremented for all other types of changes, i.e. technical enhancements, corrections, updates, etc.

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 rules.

Transposition dates	
Date of adoption:	18 April 1997
Date of latest announcement of this ETS (doa):	31 August 1997
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	28 February 1998
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1 Scope

This European Telecommunication Standard (ETS) defines the requirements for synchronization on the GSM radio sub-system. (However, it does not define the synchronization algorithms to be used in the Base Transceiver Station (BTS) and Mobile Station (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 350): "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".

[2] GSM 04.08 (ETS 300 940): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".

[3] GSM 05.02 (ETS 300 908): "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path".

[4] GSM 05.05 (ETS 300 910): "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception".

[5] GSM 05.08 (ETS 300 911): "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".

[6] GSM 03.30 (ETR 364): "Digital cellular telecommunications system; Radio network planning aspects".

1.3 Definitions and abbreviations

For the purposes of this ETS, the following definitions apply:

BTS: Base Transceiver Station.

Timing Advance: A signal sent by the BTS to the MS which the MS uses to advance its timings of transmissions to the BTS so as to compensate for propagation delay.

Quarter bit number: The timing of quarter bit periods (12/13 µs) 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 BTS: The BTS 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 BTS 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 (i.e. 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.

Abbreviations used in this ETS are listed in GSM 01.04.