

# SLOVENSKI STANDARD

## SIST ETS 300 585 E3:2003

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8 [[ ]HJb]`WV] b]`HY`Y\_ca i b]\_UW`g\_]`g]ghYa `fZUnU&L`E`I dcfUVUj a Ygb]\_UnU  
dcXUh\_cj bc`HYfa ]bUg\_c`cdfYa c`EcdfYa c`nUnU\_`1 Yj Ub`Y`dcXUh\_cj b]`j`cXcj  
fB H9!8 7 9L`nUghcf]HYj`\_fUh\_]`gdcfc ]`fGA GL]b`ghcf]HYj`WV] bYfUX]cX]Z n]Y`f] GA  
\$+`\$) L

Digital cellular telecommunications system (Phase 2) (GSM); Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS) (GSM 07.05)

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|-----------|---|--|

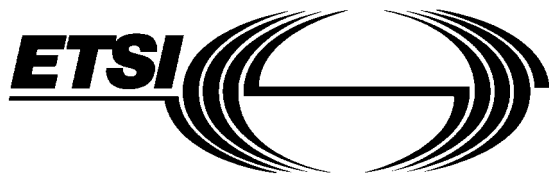
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GLOBAL SYSTEM FOR  
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**Digital cellular telecommunications system (Phase 2);  
Use of Data Terminal Equipment - Data Circuit terminating  
Equipment (DTE - DCE) interface for  
Short Message Service (SMS) and Cell Broadcast Service (CBS)  
(GSM 07.05)**

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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 a protocol for use of the V series DTE/DCE interface over the R reference point for SMS and CBS procedures within the Digital cellular telecommunications system (Phase 2).

This ETS correspond to GSM 07.05 version 4.6.0.

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-TS) (note).

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

| Transposition dates   |                   |
|---|-------------------|
| Date of adoption of this ETS:   | 30 September 1996 |
| Date of latest announcement of this ETS (doa):  | 31 December 1996  |
| Date of latest publication of new National Standard or endorsement of this ETS (dop/e): | 30 June 1997      |
| Date of withdrawal of any conflicting National Standard (dow):                          | 30 June 1997      |

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## 0 Scope

This European Telecommunication Standard (ETS) defines three interface protocols for control of SMS functions within a GSM mobile telephone from a remote terminal via an asynchronous interface.

Section 2 defines a binary protocol ("Block Mode"). The protocol includes error protection and is suitable for use where the link may not be completely reliable. It will be of particular use where control of remote devices is required. Efficient transfer of binary encoded user data is possible.

Section 3 defines a character-based interfaced based on "AT" commands ("Text Mode"). This mode is suitable for unintelligent terminals or terminal emulators, and for application software built on command structures like those defined in V.25ter. Some of the commands defined in Section 3 will also be useful for implementations of Section 2 and/or Section 4, for example enabling an indication of incoming SMS messages.

Section 4 defines a character-based interface with hex-encoded binary transfer of message blocks ("PDU Mode"). This mode is suitable for software drivers based on AT command structures which do not understand the content of the message blocks and can only pass them between the MT and "upper level" software resident in the TE.

In all three modes, the terminal is considered to be in control for SMS/CBS transactions.

This specification considers the mobile termination to be a single entity. Other GSM Technical Specifications describe the split of functionality between the mobile equipment and SIM.

The three "modes" referred to above, are represented in figure 0.1/GSM 07.05.

The "Block mode" is a self contained mode in its own right, and when entered, control will remain within that mode until the procedures to exit the mode are executed after which control is returned to the V.25ter "command" state or "on-line command" state.

The "Text" and "PDU" modes are not in themselves V.25ter states but are simply sets of commands which will operate in either the V.25ter "command" state or "on-line command" state. The "Text" and "PDU" modes are transitory states and after each operation, control is automatically returned to the V.25ter "command" state or "on-line command" state. Whilst in the V.25ter command state, the MS is available to handle incoming and outgoing calls such as Data or Facsimile.

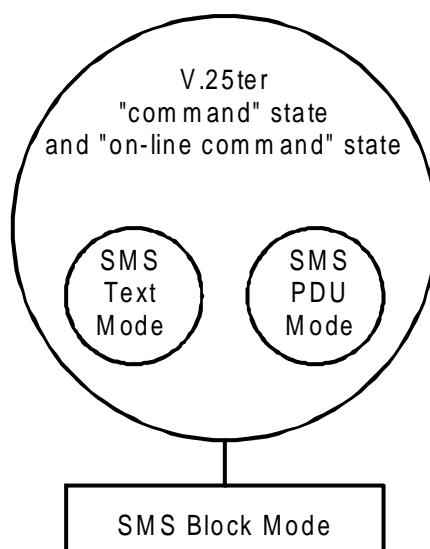


Figure 0.1/GSM 07.05: Block, Text and PDU modes

## 0.1 Normative references

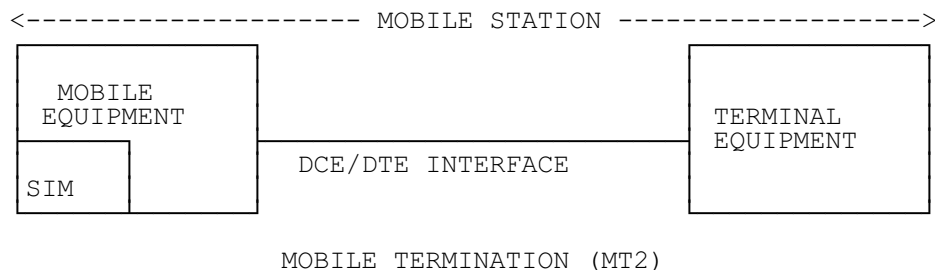
This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply 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): "Digital cellular telecommunication system (Phase 2); Abbreviations and acronyms".
- [2] GSM 03.38 (ETS 300 628): "Digital cellular telecommunication system (Phase 2); Alphabet and language specific information".
- [3] GSM 03.40 (ETS 300 536): "Digital cellular telecommunication system (Phase 2); Technical realization of the Short Message Service (SMS) Point to Point (PP)".
- [4] GSM 03.41 (ETS 300 537): "Digital cellular telecommunication system (Phase 2); Technical realization of Short Message Service Cell Broadcast (SMSCB)".
- [5] GSM 04.08 (ETS 300 557): "Digital cellular telecommunication system (Phase 2); Mobile radio interface layer 3 specification".
- [6] GSM 04.11 (ETS 300 559): "Digital cellular telecommunication system (Phase 2); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [7] GSM 04.12 (ETS 300 560): "Digital cellular telecommunication system (Phase 2); Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface".
- [8] GSM 07.01 (ETS 300 582): "Digital cellular telecommunication system (Phase 2); General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".
- [9] GSM 07.07 (ETS 300 642): "Digital cellular telecommunication system (Phase 2); AT command set for GSM Mobile Equipment (ME)".
- [10] GSM 11.11 (ETS 300 608): "Digital cellular telecommunication system (Phase 2); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
- [11] CCITT Recommendation V.25ter: "Serial Asynchronous Automatic Dialling And Control".
- [12] CCITT Recommendation V.24: "List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment".
- [13] CCITT Recommendation E.164: "Numbering plan for the ISDN era".
- [14] CCITT Recommendation E.163: "Numbering plan for the international telephone service".

## 0.2 Abbreviations

Abbreviations used in this ETS are listed in GSM 01.04 [1].

## 1 Reference configuration



**Figure 1: Reference configuration**

The mobile termination consists of the mobile equipment (ME) and the SIM. Messages may be stored in either, but this specification does not distinguish between messages stored in the SIM or in the ME. The management of message storage in the two parts of the mobile termination is a matter for the mobile termination implementation.

### 1.1 V.24 Interface Circuits

The operation of the CCITT V.24 blue book interface circuits for SMS is shown in table 1.1/GSM 07.05.

**Table 1.1/GSM 07.05: Use of V.24 interface circuits**

| V.24 CIRCUIT | DESCRIPTION   | TE to MT | MT to TE |
|--------------|---------------|----------|----------|
| CT102        | signal ground | x        | x        |
| CT103        | TXD           | x        |          |
| CT104        | RXD           |          | x        |
| CT105        | RTS           | x        |          |
| CT106        | CTS           |          | x        |
| CT107        | DSR           |          | x        |
| CT108.2      | DTR           | x        |          |
| CT109        | DCD           |          | x        |

NOTE: CT105 at the TE is connected to CT133 at the MT

#### 1.1.1 Circuit definitions for the SMS Block mode

##### CT103

All commands from the TE to the MT are transferred across this circuit. Inband flow control is not permitted during Block Mode.

##### CT104

All responses/indications from the MT to the TE are transferred across this circuit. Inband flow control is not permitted during Block Mode.

## CT105

This circuit allows the TE to flow control the MT when in the Block Mode and at other times if hardware flow control is enabled.

## CT106

This circuit allows the MT to flow control the TE when in the Block Mode and at other times if hardware flow control is enabled.

## CT107

This circuit shall be set to the ON condition before entry into the Block Mode, and shall remain in the ON condition during Block Mode. If the TE detects that this circuit returns to the OFF condition during the block mode then the TE shall return CT108.2 to the OFF condition and exit the Block Mode.

## CT108.2

This circuit shall be set in the ON condition before the AT+CESP command is sent from the TE to begin the Block Mode, and shall be maintained in the ON condition during the Block Mode. It shall be returned to the OFF condition after the command 'END SMS MODE' has been accepted and acknowledged by the MT. If the MT detects that this circuit returns to the OFF condition during the Block Mode then the MT shall exit the Block Mode.

## CT109

This circuit shall be set to the ON condition before entry into the Block Mode and remain in the ON condition during the Block Mode. If the TE detects that this circuit returns to the OFF condition during the Block Mode then the TE shall return CT108.2 to the OFF condition and shall exit the Block Mode.

### 1.1.2 Circuit definitions for the SMS Text and PDU modes

Only circuits CT102, CT103 and CT104 are mandatory for the Text and PDU modes. The functionality and operation of other circuits shall be in accordance with V.25ter.

## 2 SMS Block Mode

### 2.1 Beginning and ending of SMS/CBS Block Mode

#### 2.1.1 Beginning SMS/CBS Block Mode

As described in TS GSM 07.01, the DTE/DCE interface is normally associated with the terminal adaptation function (TAF), if such a function is available. When no data connection is in progress, and the terminal equipment wishes to enter SMS/CBS mode, the command 'AT+CESP' shall be issued by the TE through the DTE/DCE interface requesting that the Block mode protocol described in this specification is to be used. The syntax of this command is further described in section 3.2.4 later. The syntax for these commands is derived from V.25ter, i.e. the command is encoded as an IA5 character string together with delimiters as described in V.25ter.

Upon receipt of this command, the mobile termination shall respond as follows:

If the mobile termination supports SMS/CBS block mode commands, responses and indications as described in this technical specification, it shall respond with 'OK' and enter the SMS/CBS mode.

If the mobile termination does not support SMS/CBS block mode commands, responses and indications as described in this technical specification, it shall respond with 'ERROR' and remain in the current mode..

If the SMS/CBS block mode command is accepted by the mobile termination, then all further commands, responses and indications shall be as defined in section 2 of this technical specification. These SMS/CBS mode commands, responses and indications use 8-bit encoded data and not IA5 characters.

#### 2.1.2 Returning from SMS/CBS Block Mode To Default Mode

When the terminal equipment wishes to return to default mode from SMS/CBS mode, it shall issue the command 'END SMS MODE', described in section 2.4.1.11. The mobile termination shall respond with 'OK' to indicate that the DTE/DCE interface has returned to default mode. The TE shall change back to default mode whether or not such a response is received.

The TE may also indicate that it has exit from the SMS/CBS mode through the use of CT 108/2 (see section 1.1)

If an incoming data call arrives while the DTE/DCE interface is set to SMS/CBS mode, then the mobile termination may autonomously issue the 'END SMS MODE' indication (section 2.4.2.11) and revert to default mode in order to connect the data call through the TAF.

The MT may exit from SMS/CBS mode autonomously if the power to the MT is switched off and then on again. In addition, the MT manufacturer may provide MMI to change the mode back to the default mode. In the latter case, the MT shall issue the 'END SMS MODE' indication (section 2.4.2.11) and exit the SMS/CBS mode immediately.

The MT may also indicate that it has exit from the SMS/CBS mode through the use of CT 107 and CT 109 (see section 1.1).

A BREAK condition in either direction at the DTE/DCE interface shall cause the TE and the MT to exit from the SMS/CBS block mode and return to the default mode.

In the event where the TE or the MT find themselves unable to recover from a protocol error then either entity may exit the SMS/CBS mode using any of the mechanisms described above. Confirmation of default mode operation will be achieved through the use of AT commands and responses.