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**Digital cellular telecommunications system (Phase 2+);  
Teleservices supported by a GSM  
Public Land Mobile Network (PLMN)  
(GSM 02.03 version 5.1.2)**

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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 describes and defines a recommended set of Teleservices to be supported by a GSM (Phase 2+) PLMN in connection with other networks as a basis for defining the network capabilities required.

This ETS is a TC-SMG approved GSM technical specification version 5, which contains 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 300 502 (GSM 02.03 version 4.3.1).

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 drafting rules.

| <b>Transposition dates</b>  |                 |
|---|-----------------|
| Date of adoption:   | 21 March 1997   |
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| Date of withdrawal of any conflicting National Standard (dow):                          | 31 January 1998 |

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## 0 Scope

This European Telecommunication Standard (ETS) describes and defines a recommended set of Teleservices to be supported by a GSM PLMN in connection with other networks as a basis for defining the network capabilities required.

Teleservices not included in this ETS should not be introduced unilaterally by a mobile network operator, if the provision of this service requires that the GSM signalling specifications are modified.

### 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 350): "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] GSM 02.01: "Digital cellular telecommunications system (Phase 2+); Principles of telecommunication services supported by a GSM Public Land Mobile Network (PLMN)".
- [3] GSM 02.02 (ETS 300 904): "Digital cellular telecommunications system (Phase 2+); Bearer Services (BS) supported by a GSM Public Land Mobile Network (PLMN)".
- [4] GSM 02.04 (ETS 300 918): "Digital cellular telecommunications system (Phase 2+); General on supplementary services".
- [5] GSM 02.68 (ETS 300 925): "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS) - Stage 1".
- [6] GSM 02.69 (ETS 300 926): "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS) - Stage 1".
- [7] GSM 03.40 (ETS 300 901): "Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS) Point-to-Point (PP)".
- [8] GSM 03.41 (ETS 300 902): "Digital cellular telecommunications system (Phase 2+); Technical realization of Short Message Service Cell Broadcast (SMSCB)".
- [9] GSM 04.08 (ETS 300 940): "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".
- [10] GSM 07.01 (ETS 300 913): "Digital cellular telecommunications system (Phase 2+); General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".
- [11] GSM 07.05: "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)".
- [12] CCITT Recommendation T.4: "Standardization of group 3 facsimile apparatus for document transmission".
- [13] CCITT Recommendation T.30: "Procedures for document facsimile transmission in the general switched telephone network".

[14] CCITT Recommendation Q.931: "ISDN user-network interface layer 3 specification for basic call control".

## 0.2 Abbreviations

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

# 1 Framework for describing teleservices supported by a GSM PLMN

Teleservices supported by a GSM PLMN are described by a number of attributes which are intended to be largely independent.

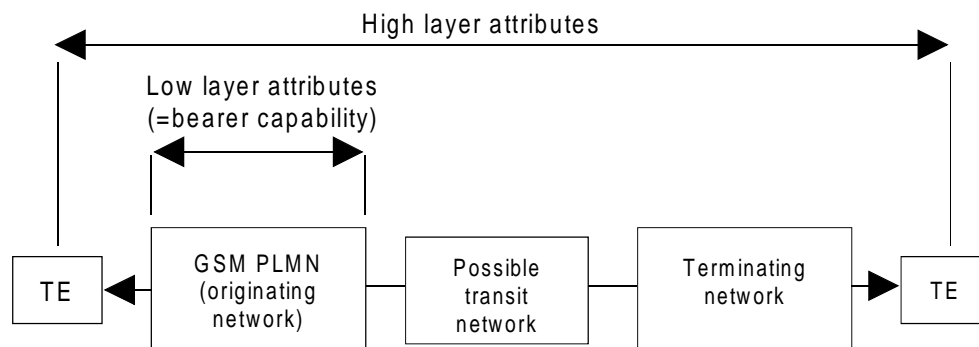
These attributes are described and defined in specification GSM 02.01 [2].

They are grouped into three categories:

- High layer attributes;
- Low layer attributes (describing the Bearer capabilities which support the Teleservice):
  - information transfer attributes;
  - access attributes.
- General attributes.

NOTE: Teleservices generally make use of underlying lower layer capabilities of Bearer Services as defined in GSM 02.02 [3]. However, where Teleservices are provided by a single Administration, RPOA or other services provider, the combination of values of lower layer attributes applicable to specific Teleservices may not necessarily be identical to any of those identified for the Bearer Services appearing in GSM 02.02 [3].

Figure 1 shows the relationship between the different categories of services attributes, and their scope within a Teleservice.



NOTE 1: A transit network may not exist.

NOTE 2: Communication may be established from both ends in principle.

**Figure 1: Relationship between the categories of services attributes and their scope within a Teleservice**



## 2 List of the teleservice attributes

Table 1 gives the list of the attributes. For the definitions and possible values of these attributes, see GSM 02.01 [2].

**Table 1: List of Teleservice attributes**

|   |   |  |
|---|---|--|
| 1. High layer capabilities  | 1.1 Type of user information<br>1.2 Layer 4 protocol functions<br>1.3 Layer 5 " "<br>1.4 Layer 6 " "<br>1.5 Layer 7 " "   | Dominant Teleservice attribute category<br><br>Secondary attributes<br>" "                   |
| 2. Low layer capabilities (describing the Bearer capability which supports the Teleservice) | 2.1 Information transfer<br>2.1.1 Information transfer capabilities<br>2.1.2 Information transfer mode<br>2.1.3 Information transfer rate<br>2.1.4 Structure<br>2.1.5 Establishment of communication<br>2.1.6 Communication configuration<br>2.1.7 Symmetry | " "<br>" "<br>" "<br>Individual services (in the category)                                   |
|   | 2.2 Access (GSM 02.01)<br>2.2.1 Signalling access<br>2.2.2 Information access<br>2.3 Interworking<br>2.3.1 Terminating network type<br>2.3.2 National/international interworking<br>2.3.3 Interface of terminal equipment                                   | Qualifying attributes<br>" "<br>" "<br>" "<br>" "<br>Further specify the individual services |
| 3. General  | 3.1 Supplementary services provided<br>3.2 Quality of service<br>3.3 Operational and commercial   |  |

## 3 List of teleservice categories and individual teleservices

Table 2 presents a list of all Teleservices categories and of individual Teleservices and the associated dominant and secondary attributes.

## 4 Description of individual teleservices

The annex contains a data sheet per Teleservice with all attributes and comments.

## 5 Bearer capabilities supporting teleservices

According to GSM 02.01 [2] the Bearer Capability defines the technical features of a Teleservice as they appear to the user at the customer access point or an appropriate interface of a fixed network. The Bearer Capability is characterized by information transfer, access and interworking attributes. The same set of attributes as for a Bearer Service is used. A Bearer Capability is associated with every Teleservice.

## 6 Possible further evolution phases of teleservices in a GSM PLMN

Possible further evolution phases according to the definition in GSM 01.06 could become necessary. For instance, speech coding procedures (half rate speech codec) will provide for the reduction of the bit rate for speech transmission and thus increase the network capacity.

**Table 2: Teleservice categories and Teleservices**

| Dominant attribute       | Category of teleservice |                        | Individual Teleservice |  |         |
|--------------------------|-------------------------|------------------------|------------------------|--|---------|
|                          | No                      | Name                   | No                     | Name   |         |
| Type of user information |                         |                        |                        |  |         |
| Speech                   | 1                       | Speech transmission    | 11<br>12               | Telephony<br>Emergency Calls   |         |
| Short message            | 2                       | Short message service  | 21<br>22<br>23         | Short message MT/PP<br>Short message MO/PP<br>Short message cell broadcast |         |
| Facsimile                | 6                       | Facsimile transmission | 61                     | Alternate speech and facsimile group 3                                     | T<br>NT |
|                          |                         |                        | 62                     | Automatic Facsimile group 3  | T<br>NT |
| Speech                   | 9                       | Voice Group service    | 91<br>92               | Voice Group Call Service<br>Voice Broadcast Service                        |         |

NOTE: Direct access to private networks is foreseen by recommended provision A.

## Annex A (normative): Description of individual Teleservices

NOTE 1: Interworking with Telex may be provided via teletex-telex- or other interworking functions.

NOTE 2: Within the GSM PLMN the "Information transfer rate" attribute is not indicated, this is because the user may access the PLMN at either an "S" or "R" reference point. In addition, the "Information transfer rate" at other reference points within the PLMN assumed or otherwise may be different.

### A.1 Individual Teleservices

#### A.1.1 Telephony

| Teleservice 11, Telephony                      |                                       |                                |   |                     |                                       |                                 |
|--|---------------------------------------|--------------------------------|---|---------------------|---------------------------------------|---------------------------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S | 1.<br>HLC                             | 1.1 Type or user information   |   | speech              |                                       |                                 |
|  |                                       | 1.2 Layer 4 protocol functions |   | -                   |                                       |                                 |
|  |                                       | 1.3 Layer 5 protocol functions |   | -                   |                                       |                                 |
|  |                                       | 1.4 Layer 6 protocol functions |   | -                   |                                       |                                 |
|  |                                       | 1.5 Layer 7 protocol functions |   | -                   |                                       |                                 |
|  | 2.<br>LLC                             | Inform<br>transfer             | 2.1                                     |                     | 2.1.1 Information transfer capability | speech (digital representation) |
|  |                                       |                                |   |                     | 2.1.2 Information transfer mode       | circuit                         |
|  |                                       |                                |   |                     | 2.1.3 Information transfer rate       | not applicable                  |
|  |                                       |                                |   |                     | 2.1.4 Structure                       | not applicable                  |
|  |                                       |                                |   |                     | 2.1.5 Establishment of connection     | demand MO MT                    |
|  |                                       |                                |   |                     | 2.1.6 Communication configuration     | point to point                  |
|  |                                       |                                |   |                     | 2.1.7 Symmetry                        | bi-directional symmetry         |
|  |                                       | Access<br>at MS                | 2.2                                     |                     | 2.2.1 Signalling access               | manual                          |
|  |                                       |                                | 2.2.2 Information access<br>(GSM 02.01) | rate                | full rate/half rate                   |                                 |
|  |                                       |                                |   | interface           |                                       |                                 |
| Inter-<br>working                              | 2.3.1 Visible network type            |                                | PSTN/ISDN/GSM-PLMN                      |                     |                                       |                                 |
|  | 2.3.2 National/Internat. interworking |                                | international/national                  |                     |                                       |                                 |
|  | 2.3.3 Interface of TE to terminating  |                                | 2 wire, analogue                        | 4 wire<br>S (B+B+D) | GSM/ME                                |                                 |
| 3.<br>Gen                                      | 3.1 Supplementary service provided    |                                | GSM 02.04                               |                     |                                       |                                 |
|  | 3.2 Quality of service                |                                |   |                     |                                       |                                 |

#### Comments:

This service provides the transmission of speech information and audible signalling tones of the PSTN/ISDN. In the GSM PLMN and the fixed network processing technique appropriate for speech such as analogue transmission, echo cancellation and low bit rate voice encoding may be used. Hence, bit integrity is not assured.

- 1) Transparency for telephone signalling tones is provided.
- 2) Transparency for voice band facsimile signals is not mandatory. (Appropriate bearer services see GSM 02.02 [3]).
- 3) Transparency for end to end speech encryption is not mandatory. If a user needs to apply this technique an appropriate bearer service (GSM 02.02 [3]) can be used.
- 4) Transmission of DTMF is provided in the mobile to fixed direction (e.g. for controlling voice mail boxes) during any time of an established call.

**A.1.2 Emergency calls**

| Teleservice 12, Emergency calls                |  |                                |   |           |                                 |
|--|--|--------------------------------|---|-----------|---------------------------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S | 1.<br>HLC                                  | 1.1 Type or user information   |   | speech    |                                 |
|  |  | 1.2 Layer 4 protocol functions |   | -         |                                 |
|  |  | 1.3 Layer 5 protocol functions |   | -         |                                 |
|  |  | 1.4 Layer 6 protocol functions |   | -         |                                 |
|  |  | 1.5 Layer 7 protocol functions |   | -         |                                 |
|  | 2.<br>LLC                                  | 2.1<br>Inform<br>transfer      | 2.1.1 Information transfer capability   |           | speech (digital representation) |
|  |  |                                | 2.1.2 Information transfer mode         |           | circuit                         |
|  |  |                                | 2.1.3 Information transfer rate         |           | not applicable                  |
|  |  |                                | 2.1.4 Structure                         |           | not applicable                  |
|  |  |                                | 2.1.5 Establishment of connection       |           | demand MO MT                    |
|  |  |                                | 2.1.6 Communication configuration       |           | point to point                  |
|  |  |                                | 2.1.7 Symmetry                          |           | bi-directional symmetry         |
|  |  | 2.2<br>Access<br>at MS         | 2.2.1 Signalling access                 |           | manual                          |
|  |  |                                | 2.2.2 Information access<br>(GSM 02.01) | rate      | full rate/half rate             |
|  |  |                                |   | interface |                                 |
| 2.3<br>Inter-<br>working                       | 2.3.1 Visible network type                 |                                | PSTN                                    | ISDN      |                                 |
|  | 2.3.2 National/Internat. interworking      |                                | national                                |           |                                 |
|  | 2.3.3 Interface of TE to terminating Ntwk. |                                | 2 wire                                  | 4 wire    |                                 |
| 3.<br>Gen                                      | 3.1 Supplementary service provided         |                                | GSM 02.04 (see note 3)                  |           |                                 |
|  | 3.2 Quality of service                     |                                |   |           |                                 |

Comments:

- 1) A standardized access method throughout all GSM PLMNs is mandatory. In addition national emergency call numbers of PSTN/ISDN must be usable from MS.
- 2) It shall be an option of the network operator whether to accept emergency calls coming from mobile stations which do not transmit an IMSI or a TMSI.
- 3) Emergency calls supersede all constraints imposed by supplementary services or mobile station features used for other Tele or Bearer services. The lock state of the MS is overridden by the SOS-procedure.
- 4) Emergency calls will be routed to the emergency services in accordance with national regulations.
- 5) In order to help identifying callers in cases of misuse databases in the GSM PLMN may be accessed to retrieve the identity of the calling MS.

### A.1.3 Short Message Service (SMS)

#### A.1.3.1 Short message service MT/PP

| Teleservice 21, Short Message MT point-to-point 1), 2) |                                    |                                |                                       |                                 |                |
|--|------------------------------------|--------------------------------|---------------------------------------|---------------------------------|----------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S         | 1.                                 | 1.1 Type or user information   |                                       | short message, ≤ 160 characters |                |
|  |                                    | 1.2 Layer 4 protocol functions |                                       |                                 |                |
|  |                                    | 1.3 Layer 5 protocol functions |                                       | see GSM 03.40                   |                |
|  |                                    | 1.4 Layer 6 protocol functions |                                       | see GSM 03.40                   |                |
|  |                                    | 1.5 Layer 7 protocol functions |                                       | see GSM 03.40                   |                |
|  | 2.                                 | Inform<br>transfer             | 2.1                                   |                                 |                |
|  |                                    |                                | 2.1.1 Information transfer capability |                                 | not applicable |
|  |                                    |                                | 2.1.2 Information transfer mode       |                                 | not applicable |
|  |                                    |                                | 2.1.3 Information transfer rate       |                                 | not applicable |
|  |                                    |                                | 2.1.4 Structure                       |                                 | not applicable |
|  |                                    |                                | 2.1.5 Establishment of connection     |                                 | not applicable |
|  |                                    |                                | 2.1.6 Communication configuration     |                                 | not applicable |
|  |                                    | 2.1.7 Symmetry                 |                                       | not applicable                  |                |
|  |                                    | Access<br>at MS                | 2.2                                   |                                 |                |
|  |                                    |                                | 2.2.1 Signalling access               |                                 | see GSM 07.05  |
|  | Inter-<br>working                  | 2.3                            |                                       |                                 |                |
|  |                                    | 2.3.1 Visible network type     |                                       | not applicable 3)               |                |
| 2.3.2 National/Internat. interworking                  |                                    | not applicable 3)              |                                       |                                 |                |
| 3.   | 3.1 Supplementary service provided |                                | GSM 02.04                             |                                 |                |
|  | 3.2 Quality of service             |                                |                                       |                                 |                |
| Gen  |                                    |                                |                                       |                                 |                |

#### Comments:

- 1) This service provides the transmission of a short message from a message handling system (service centre) to a mobile station. The service centre is functionally separated from the GSM PLMN.
- 2) After reception an acknowledgement message should be sent back.
- 3) There is only an interworking between the PLMN and SMS Service Centre (SMS-SC). Connections from the fixed network to the SMS-SC are out of the scope of the GSM Standard.
- 4) The information transfer attributes refer to the connection-oriented services (ISDN, Bluebook Q.931). The Short Message Service is not a connection orientated service, hence the transfer attributes here are not applicable.

A.1.3.2 Short message service MO/PP

| Teleservice 22, Short Message MO point-to-point 1), 2) |                            |  |                    |   |                |                |
|--|----------------------------|--|--------------------|---|----------------|----------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S         | 1.                         | 1.1 Type or user information               |                    | short message, ≤ 160 characters         |                |                |
|  |                            | 1.2 Layer 4 protocol functions             |                    |   |                |                |
|  |                            | 1.3 Layer 5 protocol functions             |                    | see GSM 03.40                           |                |                |
|  |                            | 1.4 Layer 6 protocol functions             |                    | see GSM 03.40                           |                |                |
|  |                            | 1.5 Layer 7 protocol functions             |                    | see GSM 03.40                           |                |                |
|  | I<br>B<br>U<br>T<br>E<br>S | 2.   | Inform<br>transfer | 2.1.1 Information transfer capability   | not applicable |                |
|  |                            |  |                    | 2.1.2 Information transfer mode         | not applicable |                |
|  |                            |  |                    | 2.1.3 Information transfer rate         | not applicable |                |
|  |                            |  |                    | 2.1.4 Structure                         | not applicable |                |
|  |                            |  |                    | 2.1.5 Establishment of connection       | not applicable |                |
|  |                            |  |                    | 2.1.6 Communication configuration       | not applicable |                |
|  |                            |  |                    | 2.1.7 Symmetry                          | not applicable |                |
|  |                            | 2.2  | Access<br>at MS    | 2.2.1 Signalling access                 | see GSM 07.05  |                |
|  |                            |  |                    | 2.2.2 Information access<br>(GSM 02.01) | rate           | not applicable |
|  |                            |  |                    |   | interface      |                |
| 2.3  | Inter-<br>working          | 2.3.1 Visible network type                 | not applicable 3)  |   |                |                |
|  |                            | 2.3.2 National/Internat. interworking      | not applicable 3)  |   |                |                |
|  |                            | 2.3.3 Interface of TE to terminating Ntwk. | not applicable 3)  |   |                |                |
| 3.   | Gen                        | 3.1 Supplementary service provided         |                    | GSM 02.04                               |                |                |
|  |                            | 3.2 Quality of service                     |                    |   |                |                |

Comments:

- 1) This service provides the transmission of a short message from a mobile station to a message handling system (service centre). The service centre is functionally separated from the GSM PLMN.
- 2) After reception an acknowledgement message is sent back.
- 3) There is only an interworking between the PLMN and SMS Service Centre (SMS-SC). Connections from the fixed network to the SMS-SC are out of the scope of the GSM Standard.
- 4) The information transfer attributes refer to the connection-oriented services (ISDN, Bluebook Q.931). The Short Message Service is not a connection orientated service, hence the transfer attributes here are not applicable.
- 5) Information from the following sources at the MS might be transmitted:
  - a pre-recorded message in a store;
  - a number from the dialling key pad;
  - information from an external keyboard or terminal equipment connected to the ME.

## A.1.3.3 Short message service Cell Broadcast (CB)

| Teleservice 23, Short Message transmission cell broadcast |                                    |                                |  |                                   |                                       |                |
|---|------------------------------------|--------------------------------|--|-----------------------------------|---------------------------------------|----------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S            | 1.                                 | 1.1 Type or user information   |  | short message, ≤ 93 characters 4) |                                       |                |
|   |                                    | 1.2 Layer 4 protocol functions |  |                                   |                                       |                |
|   |                                    | 1.3 Layer 5 protocol functions |  | see GSM 03.41                     |                                       |                |
|   |                                    | 1.4 Layer 6 protocol functions |  | see GSM 03.41                     |                                       |                |
|   |                                    | 1.5 Layer 7 protocol functions |  | see GSM 03.41                     |                                       |                |
|   | 2.                                 | Inform<br>transfer             | 2.1  |                                   | 2.1.1 Information transfer capability | not applicable |
|   |                                    |                                |  |                                   | 2.1.2 Information transfer mode       | not applicable |
|   |                                    |                                |  |                                   | 2.1.3 Information transfer rate       | not applicable |
|   |                                    |                                |  |                                   | 2.1.4 Structure                       | not applicable |
|   |                                    |                                |  |                                   | 2.1.5 Establishment of connection     | not applicable |
|   |                                    |                                |  |                                   | 2.1.6 Communication configuration     | not applicable |
|   |                                    |                                |  |                                   | 2.1.7 Symmetry                        |                |
|   |                                    | Access<br>at MS                | 2.2  |                                   | 2.2.1 Signalling access               | not applicable |
|   |                                    |                                | 2.2.2 Information access<br>(GSM 02.01)    | rate                              |                                       | not applicable |
|   |                                    |                                |  | interface                         |                                       | not applicable |
| Inter-<br>working   | 2.3                                |                                | 2.3.1 Visible network type                 | 2)                                |                                       |                |
|   |                                    |                                | 2.3.2 National/Internat. interworking      | 2)                                |                                       |                |
|   |                                    |                                | 2.3.3 Interface of TE to terminating Ntwk. | 2)                                |                                       |                |
| 3.<br>Gen   | 3.1 Supplementary service provided |                                |  | GSM 02.04                         |                                       |                |
|   | 3.2 Quality of service             |                                |  |                                   |                                       |                |

## Comments:

- 1) This service provides the transmission of a short message from a message handling system to all mobile stations in the area of a Base Station. The service centre is functionally separated from the GSM PLMN. There is no acknowledgement message after reception.
- 2) An interworking only with the Cell-Broadcast Service Centre is foreseen. Connections from the fixed network to the SC are out of the scope of the GSM Standard.
- 3) The information transfer attributes refer to the connection-oriented services (ISDN, Bluebook Q.931). The Short Message Service is not a connection orientated service, hence the transfer attributes here are not applicable.
- 4) GSM 03.41 provides up to 15 concatenated "pages" of up to 93 characters each.

#### A.1.3.4 Short message service description

Description of:

- teleservice 21, "Short message MT/PP";
- teleservice 22 "Short message MO/PP"; and
- teleservice 23 "Cell broadcast short messages".

### 1 Introduction

The purpose of this annex is to describe the short message teleservice.

Three different types of short messages are defined, namely short message MT/PP (Mobile Terminated/Point-to-Point), short message MO/PP (Mobile Originated/Point-to-Point) and Cell Broadcast short messages.

### 2 Definition of the short message service MT/PP and MO/PP

For both mobile originated and mobile terminated services the Service Centre acts as store and forward centre. The Service Centre is functionally separate from the PLMN although this does not preclude an integrated implementation. More than one service centre may be connected to a PLMN. Messages may be input to the service centre from a fixed network customer by means of a suitable telecommunications service either from the fixed network, e.g. speech, telex, facsimile, etc. or from a mobile network customer. The list is not intended to be comprehensive and it is entirely open to the service centre provider what telecommunication services it supports. The service centre shall then reformat the message into that provided by the short message service, for delivery to the mobile station.

For mobile originated SMS messages the SMT formats the message into that used by the SMS service and sends to the service centre (to allow interworking with ERMES also ERMES-format addresses may be sent from the MS to the SC). In general the user may use alphanumeric addresses for more user convenience. In principle the message may be intended for a subscriber on the fixed network or for another mobile subscriber. For the message to another mobile subscriber the service centre should deliver as described in this clause.

The message text is limited to a length of 160 characters.

The originator does not need to know the location of the mobile subscriber to whom he wants to send a message. The message is addressed to the recipient's Directory Number.

As a part of the basic service for both MT and MO, an acknowledgement will be provided on a message by message basis to the SC (MT) or MS (MO). This acknowledgement indicates that the PLMN has successfully transferred the message to the MS (MT) or SC (MO).

Optionally, the SC may offer final delivery notification to the originator. In this case, the originator may request to have a notification returned from the SC informing her about the delivery of the Short Message to the recipient. This delivery report indicates whether this particular message has been correctly received at the receiving station or not, to the extent that the SC is able to establish this. It does not indicate whether the message has been read. If the delivery report is negative, i.e. the message has not been successfully delivered to the recipient, it shall include the failure cause.

The delivery report is sent to the originator, if reachable, as soon as the information (positive or negative) is available.

In addition, the SC may use the delivery report capabilities for other purposes, such as intermediate status reports etc.

All GSM point-to-point short messages are either to or from the service centre. A message from one mobile station to another must pass through a service centre. This case is effectively an MO and MT message together. The two transactions are separate, though clearly related.



Point-to-Point messages may be sent or received when the MS is engaged on a call (voice or data), or in idle mode. However, messages which overlap the boundary of such a call, or during a handover, may be lost, in which case they will be sent again.

The accounting between the SC and PLMN if applicable is for agreement between those parties.

The originator of a short message may notify the SC of an expiry time after which the message is no longer of value and may be deleted by the SC. During the validity period of the message, the SC shall try to deliver the message. After the expiry date the SC will take no further step to deliver the message, but its status may be kept by the SC to enable the originator to enquire the result. If the originator of the short message does not request any expiry time a standard value, e.g. 24 hours, is used.

The Service Centre may give a short message a priority status. This priority message will be attempted to be delivered irrespective of whether or not the MS has been identified as temporarily absent. Delivery of non-priority messages will not be attempted if the MS has been identified as temporarily absent.

If necessary, the originator may request the SC to perform specific operations on a previously submitted short message, such as provision/cancellation of a report or deletion of the short message.

The recipient of a short message will be informed by the message about the date and time it was submitted to the SC.

If the MS Message Store is full, the Message Store Overflow indicator is activated, and any further messages received will not be accepted. An appropriate specific non-acknowledgement message shall be returned. By help of an optional flow control mechanism further waiting short messages will be transmitted after the MS has memory available again.

### **3 Reply path**

The reply path facility is an enhancement to the point-to-point SMS. In the mobile originated case the mobile user will request his Service Centre to guarantee to forward a single reply to his message back to him (Reply Path).

In the mobile terminated case the recipient of the Short Message will get an indication by the service centre that a reply via this Service centre will be accepted on a subscriptionless basis. The recipient may then submit a reply to this SC (within a period of time defined by the SC operator), which is then forwarded to the submitted of the original message.

No subscription with the Service centre is needed by the replying user. The costs, if any, for the reply path are allocated to the originator.

### **4 Definition of the cell broadcast short message**

The cell broadcast is a Teleservice which enables an Information Provider to submit short messages for broadcasting to a specified area within the PLMN.

The cell broadcast service is characterized by the following aspects:

- (i) No acknowledgement is sent from the MS.
- (ii) The cell broadcast message is sent on control channels in a limited area, defined by the originator of the message, by agreement with the PLMN.
- (iii) An identifier is associated with each message. This identifier is received by the MS and used by the short message function of the MS not to store broadcast messages which are not wanted or which have already been received.
- (iv) Reception is only possible in idle mode.
- (v) Generally, cell broadcast messages will be sent continuously, so that all such messages are sent in turn, and then repeated. The cycle time will need to be short enough for important messages to be received by travellers moving through a group of cells.

- (vi) Cell broadcast messages are MT only. The origination of these messages is outside the scope of GSM.
- (vii) The maximum length of each cell broadcast message will be 93 characters. GSM 03.41 describes a concatenation mechanism which allows up to 15 of these 93 character messages treated as segments of a longer message. These segments are then referred to as "pages".
- (viii) Cell broadcast DRX mode is defined to improve the battery life for Mobile Stations. This feature is optional.
- (ix) The cell broadcast channel allowing the transfer of broadcast messages to the MS is divided into the basic channel and the extended channel. The transfer and scheduling of the messages on both channels shall be done independently. The support of the extended cell broadcast channel by a MS is optional. The reading of the extended SMSCB broadcast channel by the MS shall have low priority, i.e. if necessary the reading of broadcast messages on the extended channel can be interrupted.

**A.1.4 Alternate speech/facsimile G3**

| Teleservice 61, Alternate speech and facsimile group 3 |           |                                    |     |   |                                       |                              |
|--|-----------|------------------------------------|-----|---|---------------------------------------|------------------------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S         | 1.<br>HLC | 1.1 Type or user information       |     | facsimile/speech                                      |                                       |                              |
|  |           | 1.2 Layer 4 protocol functions     |     | Procedures according to CCITT recommendation T.30/T4. |                                       |                              |
|  |           | 1.3 Layer 5 protocol functions     |     |   |                                       |                              |
|  |           | 1.4 Layer 6 protocol functions     |     |   |                                       |                              |
|  |           | 1.5 Layer 7 protocol functions     |     |   |                                       |                              |
|  | 2.<br>LLC | Inform<br>transfer                 | 2.1 |   | 2.1.1 Information transfer capability | alternate speech/group 3 fax |
|  |           |                                    |     |   | 2.1.2 Information transfer mode       | circuit                      |
|  |           |                                    |     |   | 2.1.3 Information transfer rate       | up to 9 600 bits/s           |
|  |           |                                    |     |   | 2.1.4 Structure                       | not applicable               |
|  |           |                                    |     |   | 2.1.5 Establishment of connection     | demand (MO MT)               |
|  |           |                                    |     |   | 2.1.6 Communication configuration     | point-to-point               |
|  |           |                                    |     |   | 2.1.7 Symmetry                        | bi-directional symmetry      |
|  |           | Access<br>at MS                    | 2.2 |   | 2.2.1 Signalling access               | 1.440/450 (GSM 04.08)        |
|  |           |                                    |     | 2.2.2 Information access                              | rate                                  | fullrate                     |
|  |           |                                    |     | (GSM 02.01)   | interface                             | 2 wire analogue              |
|  |           | Inter-<br>working                  | 2.3 |   | 2.3.1 Visible network type            | PSTN      ISDN      GSM      |
|  |           |                                    |     |   | 2.3.2 National/Internat. interworking | international/national       |
|  |           |                                    |     |   | 2.3.3 Interface of TE to terminating  | 2 wire, analogue/GSM MS      |
|  | 3.<br>Gen | 3.1 Supplementary service provided |     | GSM 02.04   |                                       |                              |
|  |           | 3.2 Quality of service             |     |   |                                       |                              |

Comments:

- 1) This Teleservice allows the connection of CCITT group 3 fax apparatus (send and/or receive) to the mobile stations of a GSM PLMN. Facsimile connections may be established to/from group 3 apparatus in the PSTN, ISDN or GSM PLMN.
- 2) A high quality of service even under bad radio conditions and/or in connection to/from moving vehicles is required.
- 3) Both speech and fax portions of the call will use a full rate.

- 4) Subscription for TS61 includes also subscription for TS62 (refer to GSM 02.01[2]). For this reason and in order to allow a user to change between ME supporting TS61 or TS62 both a network and a MS supporting TS61 shall also accept call set-ups for TS62. If a subscriber originates/receives a TS61 call but either the MS or the network do not support TS61 (but supports TS62), then TS61 shall be negotiated to TS62 in accordance to the rules specified in GSM 07.01 [10]. If the negotiation does not succeed, then the call shall be released.

### A.1.5 Automatic facsimile G3

| Teleservice 62, Alternate facsimile group 3    |                                    |                                |                                       |   |                                       |                         |                       |
|--|------------------------------------|--------------------------------|---------------------------------------|---|---------------------------------------|-------------------------|-----------------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S | 1.<br>HLC                          | 1.1 Type or user information   |                                       | facsimile   |                                       |                         |                       |
|  |                                    | 1.2 Layer 4 protocol functions |                                       | Procedures according to CCITT recommendation T.30/T4. |                                       |                         |                       |
|  |                                    | 1.3 Layer 5 protocol functions |                                       |   |                                       |                         |                       |
|  |                                    | 1.4 Layer 6 protocol functions |                                       |   |                                       |                         |                       |
|  |                                    | 1.5 Layer 7 protocol functions |                                       |   |                                       |                         |                       |
|  | 2.<br>LLC                          | Inform transfer                | 2.1                                   |   | 2.1.1 Information transfer capability | Facsimile group 3       |                       |
|  |                                    |                                |                                       |   | 2.1.2 Information transfer mode       | circuit                 |                       |
|  |                                    |                                |                                       |   | 2.1.3 Information transfer rate       | up to 9600 bits/s       |                       |
|  |                                    |                                |                                       |   | 2.1.4 Structure                       | not applicable          |                       |
|  |                                    |                                |                                       |   | 2.1.5 Establishment of connection     | demand (MO MT)          |                       |
|  |                                    |                                |                                       |   | 2.1.6 Communication configuration     | point-to-point          |                       |
|  |                                    |                                |                                       |   | 2.1.7 Symmetry                        | bi-directional symmetry |                       |
|  |                                    | Access at MS                   | 2.2                                   |   | 2.2.1 Signalling access               |                         | 1.440/450 (GSM 04.08) |
|  |                                    |                                |                                       |   | 2.2.2 Information access (GSM 02.01)  | rate                    | fullrate              |
|  |                                    |                                |                                       |   |                                       | interface               | 2 wire, analogue      |
| Inter-working                                  | 2.3                                |                                | 2.3.1 Visible network type            |   | PSTN      ISDN      GSM PLMN          |                         |                       |
|  |                                    |                                | 2.3.2 National/Internat. interworking |   | international/national                |                         |                       |
|  |                                    |                                | 2.3.3 Interface of TE to terminating  |   | 2 wire, analogue/GSM MS               |                         |                       |
| 3.<br>Gen                                      | 3.1 Supplementary service provided |                                | GSM 02.04                             |   |                                       |                         |                       |
|  | 3.2 Quality of service             |                                |                                       |   |                                       |                         |                       |

#### Comments:

- 1) This teleservice supports a Facsimile Group 3 Autocalling/Autoanswering mode only.
- 2) This teleservice allows connection of CCITT group 3 fax apparatus to and from the mobile stations of a GSM PLMN. Facsimile connections may be established to and from group 3 apparatus in the PSTN, ISDN or GSM PLMN.
- 3) A high quality of service even under bad radio conditions and/or in connection to/from moving vehicles is required.
- 4) If a Network receives a call set-up for TS61 and if the subscriber in question has a subscription for TS62 only, then the network shall negotiate TS61 to TS62 in accordance to the rules specified in GSM 07.01 [10]. If the negotiation does not succeed, then the call shall be released. See also item 4) in the description of TS61.

A.1.6 Voice Group Call Service

| Teleservice 91, Voice Group Call Service       |                                       |                                |   |                               |                                 |
|--|---------------------------------------|--------------------------------|---|-------------------------------|---------------------------------|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S | 1.<br>HLC                             | 1.1 Type or user Information   |   | speech                        |                                 |
|  |                                       | 1.2 Layer 4 protocol functions |   | -                             |                                 |
|  |                                       | 1.3 Layer 5 protocol functions |   | -                             |                                 |
|  |                                       | 1.4 Layer 6 protocol functions |   | -                             |                                 |
|  |                                       | 1.5 Layer 7 protocol functions |   | -                             |                                 |
|  | 2.<br>LLC                             | 2.1<br>Inform<br>transfer      | 2.1.1 Information transfer capability   |                               | speech (digital representation) |
|  |                                       |                                | 2.1.2 Information transfer mode         |                               | circuit                         |
|  |                                       |                                | 2.1.3 Information transfer rate         |                               | not applicable                  |
|  |                                       |                                | 2.1.4 Structure                         |                               | not applicable                  |
|  |                                       |                                | 2.1.5 Establishment of connection       |                               | demand MO MT                    |
|  |                                       |                                | 2.1.6 Communication configuration       |                               | multipoint                      |
|  |                                       |                                | 2.1.7 Symmetry                          |                               | bi-directional symmetry         |
|  |                                       | 2.2<br>Access<br>at MS         | 2.2.1 Signalling access                 |                               | manual                          |
|  |                                       |                                | 2.2.2 Information access<br>(GSM 02.01) | rate                          | full rate/half rate             |
|  |                                       |                                |   | interface                     |                                 |
| 2.3<br>Inter-<br>working                       | 2.3.1 Visible network type            |                                | PSTN/ISDN/GSM-PLMN                      |                               |                                 |
|  | 2.3.2 National/Internat. interworking |                                | international/national                  |                               |                                 |
|  | 2.3.3 Interface of TE to terminating  |                                | 2 wire, analogue                        | 4 wire<br>S (B+B+D)<br>GSM/ME |                                 |
| 3.<br>Gen                                      | 3.1 Supplementary service provided    |                                | GSM 02.68                               |                               |                                 |
|  | 3.2 Quality of service                |                                |   |                               |                                 |

Comments:

This service provides for speech conversation of a predefined group of service subscribers in half duplex mode on the radio link taking into account multiple mobile service subscribers involved in the VGCS call per cell. A detailed service description is given in GSM 02.68 [5].

**A.1.7 Voice Broadcast Service**

| Teleservice 92, Voice Broadcast Service        |                                       |                                |   |                     |                                 |  |
|--|---------------------------------------|--------------------------------|---|---------------------|---------------------------------|--|
| A<br>T<br>T<br>R<br>I<br>B<br>U<br>T<br>E<br>S | 1.<br>HLC                             | 1.1 Type or user Information   |   | speech              |                                 |  |
|  |                                       | 1.2 Layer 4 protocol functions |   | -                   |                                 |  |
|  |                                       | 1.3 Layer 5 protocol functions |   | -                   |                                 |  |
|  |                                       | 1.4 Layer 6 protocol functions |   | -                   |                                 |  |
|  |                                       | 1.5 Layer 7 protocol functions |   | -                   |                                 |  |
|  | 2.<br>LLC                             | 2.1<br>Inform<br>transfer      | 2.1.1 Information transfer capability   |                     | speech (digital representation) |  |
|  |                                       |                                | 2.1.2 Information transfer mode         |                     | circuit                         |  |
|  |                                       |                                | 2.1.3 Information transfer rate         |                     | not applicable                  |  |
|  |                                       |                                | 2.1.4 Structure                         |                     | not applicable                  |  |
|  |                                       |                                | 2.1.5 Establishment of connection       |                     | demand MO MT                    |  |
|  |                                       |                                | 2.1.6 Communication configuration       |                     | broadcast                       |  |
|  |                                       |                                | 2.1.7 Symmetry                          |                     | unidirectional                  |  |
|  |                                       | 2.2<br>Access<br>at MS         | 2.2.1 Signalling access                 |                     | manual                          |  |
|  |                                       |                                | 2.2.2 Information access<br>(GSM 02.01) | rate                | full rate/half rate             |  |
|  |                                       |                                |   | interface           |                                 |  |
| 2.3<br>Inter-<br>working                       | 2.3.1 Visible network type            |                                | PSTN/ISDN/GSM-PLMN                      |                     |                                 |  |
|  | 2.3.2 National/Internat. interworking |                                | international/national                  |                     |                                 |  |
|  | 2.3.3 Interface of TE to terminating  |                                | 2 wire, analogue                        | 4 wire<br>S (B+B+D) | GSM/ME                          |  |
| 3.<br>Gen                                      | 3.1 Supplementary service provided    |                                | GSM 02.69                               |                     |                                 |  |
|  | 3.2 Quality of service                |                                |   |                     |                                 |  |

Comments:

This service provides for the distribution of speech, generated by a service subscriber, to all or a predefined group service subscribers located in this area. A detailed service description is given in GSM 02.69 [6].

## History

| Document history |   |
|------------------|---|
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|                  |   |