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Digital cellular telecommunications system (Phase 2+) (GSM); enhanced Multi-Level Precedence and Pre-emption service (eMLPP) - Stage 1 (GSM 02.67 version 7.0.1 Release 1998)

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# ETSI EN 300 924 V7.0.1 (2000-01)

*European Standard (Telecommunications series)*

**Digital cellular telecommunications system (Phase 2+);  
enhanced Multi-Level Precedence and Pre-emption service  
(eMLPP) - Stage 1  
(GSM 02.67 version 7.0.1 Release 1998)**

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## Foreword

This European Standard (Telecommunications series) has been produced by the Special Mobile Group (SMG).

The present document specifies the stage 1 description of the enhanced Multi-Level Precedence and Pre-emption Service (eMLPP) within the digital cellular telecommunications system.

The contents of the present document may be subject to continuing work within SMG and may change following formal SMG approval. Should SMG modify the contents of the present document it will then be re-submitted for formal approval procedures by ETSI with an identifying change of release date and an increase in version number as follows:

Version 7.x.y

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- 7 GSM Phase 2+ Release 1998;
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  - y the third digit is incremented when editorial only changes have been incorporated in the specification.

### National transposition dates

Date of adoption of this EN:	31 December 1999
Date of latest announcement of this EN (doa):	31 March 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 September 2000
Date of withdrawal of any conflicting National Standard (dow):	30 September 2000

# 1 Scope

The present document specifies the stage 1 description of the enhanced Multi-Level Precedence and Pre-emption Service (eMLPP). This service has two parts: precedence and pre-emption. Precedence involves assigning a priority level to a call in combination with fast call set-up. Pre-emption involves the seizing of resources, which are in use by a call of a lower precedence, by a higher level precedence call in the absence of idle resources. Pre-emption can also involve the disconnection of an on-going call of lower precedence to accept an incoming call of higher precedence.

The eMLPP service is provided as a network operator's option to a domain of a network. The domain can be the whole network or a subset of the network. The eMLPP service applies to all network resources in the domain that is in common use. The eMLPP service is applicable to all mobile stations in the domain with all or some mobile stations having a respective subscription assigning precedence according to the eMLPP service.

eMLPP is a supplementary service and shall be provided to a subscriber for all basic services subscribed to and for which eMLPP applies.

NOTE: It is under study whether normal GSM Phase 2 Mobile Stations will be able to be used for this service.

The service is described from the service subscriber's and user's point of view, in particular:

- the procedure for normal operation with successful outcome;
- the action to be taken in exceptional circumstances;
- the interaction with other GSM services and features.

The present document does not deal with the Man-Machine Interface (MMI) requirements, but makes reference to the appropriate Global System for Mobile communications (GSM) specifications.

The present document is applicable to tele services 1x and 6x and to all bearer services used in a mobile network according to the digital cellular telecommunications system GSM if eMLPP is provided. Any interaction with other services and/or networks not dealt with in clauses 8 or 9 are outside the scope of the present document.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.
- For this Release 1998 document, references to GSM documents are for Release 1998 versions (version 7.x.y).

- [1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".
- [2] GSM 02.04: "Digital cellular telecommunications system (Phase 2+); General on supplementary services".
- [3] GSM 02.24: "Digital cellular telecommunications system (Phase 2+); Description of Charge Advice Information (CAI)".
- [4] GSM 02.40: "Digital cellular telecommunications system (Phase 2+); Procedures for call progress indications".

- [5] GSM 02.68: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS) - Stage 1".
- [6] GSM 02.69: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS) - Stage 1".
- [7] GSM 03.05: "Digital cellular telecommunications system (Phase 2+); Technical performance objectives".
- [8] GSM 03.68: "Digital cellular telecommunications system (Phase 2+); Voice Group Call Service (VGCS) - Stage 2".
- [9] GSM 03.69: "Digital cellular telecommunications system (Phase 2+); Voice Broadcast Service (VBS) - Stage 2".
- [10] ITU-T Recommendation I.255.3: "ISDN Multi-Level Precedence and Pre-emption (MLPP) stage 1".

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## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following definitions apply:

**calling subscriber:** Service subscriber which invokes the eMLPP service.

**network operator:** Entity which provides the network operating elements and resources for the execution of the enhanced Multi-Level Precedence and Pre-emption service (eMLPP).

**precedence:** Precedence is the priority associated with a call.

**service provider:** Entity which offers the eMLPP service for subscription. The network operator may be the service provider.

**service subscriber:** Mobile subscriber which subscribes to the eMLPP service. In principle, if a network provides eMLPP service, all users are able to subscribe to this service.

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply, in addition to those listed in GSM 01.04:

eMLPP	enhanced Multi-Level Precedence and Pre-emption
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## 4 Description

- a) The enhanced Multi-Level Precedence and Pre-emption service (eMLPP) provides different levels of precedence for call set-up and for call continuity in case of handover.

eMLPP shall be applicable also in case of roaming if supported by the related networks.

The maximum precedence level of a subscriber is set at the subscription time by the service provider, based on the subscriber's need. The subscriber may select a precedence level up to and including the maximum precedence level subscribed to, on a per call basis.

There are at maximum 7 priority levels. The two highest levels are reserved for network internal use, e.g. for emergency calls or the network related service configurations for specific voice broadcast or voice group call services. These two levels can only be used locally, i.e. in the domain of one MSC. The other five priority levels are offered for subscription and can be applied globally, e.g. on inter switch trunks, if supported by all related network elements, and also for interworking with ISDN networks providing the MLPP service.



The seven priority levels are defined as follows:

- A (highest, for network internal use).
- B (for network internal use).
- 0 (for subscription).
- 1 (for subscription).
- 2 (for subscription).
- 3 (for subscription).
- 4 (lowest, for subscription).

Levels A and B shall be mapped to level 0 for priority treatment outside of the MSC area in which they are applied.

b) Priorities shall be treated in the network as defined for the following call scenarios:

- Mobile originated calls:
  - The priority level depends on the calling subscriber.
  - If the user has no eMLPP subscription, the call shall have a default priority level defined in the network.
  - If the user has an eMLPP subscription, the call shall have the priority level selected by the user at set-up or the priority level predefined by the subscriber as default priority level by registration.
- Mobile terminated calls:
  - The priority level depends on the calling party. For this, interworking with the ISDN MLPP (Multi-Level Precedence and Pre-emption) service is required.
  - If the call is not an ISDN MLPP call, i.e. no priority level is defined, the call shall be treated in the mobile network with a default priority level.
  - If the call is an ISDN MLPP call, the call shall be treated with the priority level provided by the interfacing network.
- Mobile-to-mobile calls in case of roaming:
 

The priority shall be treated for the calling subscriber as for mobile originated calls and for the called subscriber as for mobile terminated calls.
- Mobile-to-mobile calls in one network:
 

The priority shall be treated for the calling subscriber as for mobile originated calls and for the called subscriber as for mobile terminated calls.
- Voice broadcast (VBS) and voice group calls (VGCS):
 

At the first instances of the voice broadcast or voice group call, when there is only a link between the calling mobile station and the network, the call shall be treated as defined for mobile originated calls. Then, for the set-up of the voice broadcast or voice group call links in the related cells, the call shall have the priority level as defined for the related voice broadcast or voice group call in the network.

c) There are three classes of set-up time performance and examples of the call set-up times are:

- class 1 fast set-up      1-2 s;
- class 2 normal set-up    < 5 s;
- class 3 slow set-up      < 10 s.