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Paging Systems (PS); Enhanced Radio MESSage System (ERMES); Part 2: Service aspects

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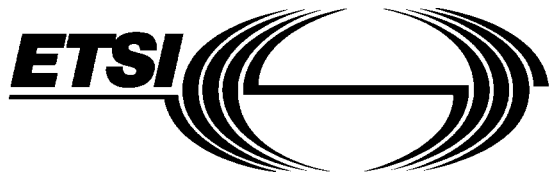
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Foreword

This European Telecommunication Standard (ETS) has been produced by the Paging Systems (PS) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS comprises seven parts with the generic title "Paging systems; European Radio Message System (ERMES)". The title of each part is listed below:

- ETS 300 133-1: "Part 1: General aspects"
- ETS 300 133-2: "Part 2: Service aspects"
- ETS 300 133-3: "Part 3: Network aspects"
- ETS 300 133-4: "Part 4: Air interface specification"
- ETS 300 133-5: "Part 5: Receiver conformance specification"
- ETS 300 133-6: "Part 6: Base station specification"
- ETS 300 133-7: "Part 7: Operation and maintenance aspects"

This part, ETS 300 133-2, specifies the services and facilities of the European Radio Message System (ERMES). This part also defines the quality of service aspects and describes the receiver features.

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1 Scope

This part of the seven part European Telecommunication Standard (ETS) 300 133, describes the service aspects of the European Radio Message System (ERMES). In particular, a recommended set of basic and supplementary services is defined and described. The features that should be considered for implementation in the paging receivers are also described. Finally, the quality of service that shall be offered to the users of the system is defined.

2 Normative references

This ETS incorporates by dated or 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] ETS 300 133-1 (1992): "Paging Systems (PS); European Radio Message System (ERMES) Part 1: General aspects".
- [2] ETS 300 133-3: (1992) "Paging Systems (PS); European Radio Message System (ERMES) Part 3: Network aspects".
- [3] ETS 300 133-5: (1992) "Paging Systems (PS); European Radio Message System (ERMES) Part 5: Receiver conformance specification".
- [4] ISO Standard 1073, parts 1 & 2: "Alphanumeric character sets for optical recognition".

3 Definitions

For the purposes of this part of the standard the following definitions apply:

Essential service or facility: a service or facility which shall be implemented and provided in all operator networks in the system.

Optional service or facility: an optional service or facility is provided at the discretion of the network operators. If implemented it shall conform with this standard.

Essential receiver feature: a receiver feature that shall be implemented in all receivers (if it is relevant to the paging category of a specific receiver).

Optional receiver feature: a receiver feature which may be implemented at the manufacturers' discretion. If implemented it shall conform with this standard.

For the definitions of the other terms used in this standard see ETS 300 133-1 [1], Clause 3, "Vocabulary".

4 Abbreviations

BVR	Basic Version Receiver
RIC	Radio Identity Code
CUG	Closed User Group
AdC	Address Code
DTMF	Dual Tone Multi-Frequency
EOM	End of Message
GAdC	Group Address Code
PNC	Paging Network Controller
PNC-H	Home PNC
PNC-I	Input PNC
PNC-T	Transmitting PNC
PSTN	Public Switched Telephone Network

5 Services and facilities

5.1 General

5.1.1 Introduction

In this Clause the set of basic and supplementary services that may be supported by an ERMES network is defined and described. Some services are specified as essential to enable operation of an international paging system. A number of optional services are also described, which operators may include in their systems.

The security aspects of the system are also included in this Clause.

5.1.2 Framework for describing the services

The text associated with each service is structured in the following way:

Definition

This paragraph provides a general definition and description of the service as it is seen by the user.

Procedures

- Provision.

This paragraph indicates if the service should be essential or optional for the network operators of the ERMES system.

- Normal procedures.

This paragraph gives an indication of who (calling party, fixed or mobile subscriber) is supposed to activate the service and on what conditions it is made available to the users (e.g. per call basis or by registration).

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Network capabilities for charging

This paragraph gives an indication of what charging arrangements the system shall be able to support.

Interworking requirements

This paragraph describes the interworking requirements between the different ERMES networks in order to implement a service.

Interaction with other services

This paragraph describes the interactions with other ERMES services when the service being described is activated.

5.1.3 Essential and optional services

Each service shall be considered as essential or optional for the network operator. In Annex A, table A.1, the essential and optional supplementary services and facilities for each paging category is given.

5.2 Basic services

The system shall offer mobile subscribers levels of basic paging services according to the receiver capabilities. The system shall check that paging calls are not accepted to higher levels than the one corresponding to the subscription. This check shall also take place on activation of a supplementary service, e.g. diversion of traffic.

The ERMES system provides two kinds of call in each basic service:

- individual calls that are initiated by using one Address Code (AdC) and are intended for only one mobile subscriber;
- group calls that are initiated by using one Group Address Code (GAdC) and are intended for two or more mobile subscribers.

5.2.1 Tone-only paging

Definition

Tone-only paging is the first basic service level and simplest kind of paging service, corresponding to the traditional type of radio paging. The tone-only service means that paging signals to a particular receiver shall cause the receiver to generate a simple alert signal. The system shall support up to 8 different alert signals per Radio Identity Code (RIC). The system shall transmit the message within a message delivery time depending on the level of priority (see subclause 7.2).

Procedures

- Provision.

This essential service shall be provided by all network operators. It shall be implemented in the Paging Network Controller (PNC) and all types of receivers, except transparent data receivers. The service may be implemented in the transparent data receiver.

- Normal procedures.

Tone-only paging can be activated by the calling party by any Public Switched Telephone Network (PSTN) telephone on a per call basis to a mobile subscriber in the system. It may also be activated by other terminal equipment.

Network capabilities for charging

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The service should be charged on subscription and/or on a per call basis according to the network operator's policy.

Interworking requirements

None.

Interaction with other services

A number of supplementary services cannot be activated when tone-only calls are sent (see Annex A, table A.1).

5.2.2 Numeric paging

Definition

Numeric paging is the second service level. It allows transmission of up to at least 20 numeric or special characters. This service is intended for mobile subscribers using pagers with the capability to receive, store and display numeric information in addition to tone-only paging. The character set is included in Annex B, table B.1. The system shall transmit the message within a message delivery time depending on the level of priority (see subclause 7.2). The maximum message length that the ERMES system can support is 16000 numeric characters. The network operators shall provide for a maximum message length between 20 and 16000 numeric characters. Messages longer than the maximum message length that a specific receiver can accept shall not be delivered. The calling party shall be informed that the message is too long (see also subclause 5.2.4 for very long messages).

Procedures

- Provision.

This essential service shall be provided by all network operators. It shall be implemented in the PNC as well as in numeric and alphanumeric receivers. The service may be implemented in the transparent data receiver.

- Normal procedures.

The service can be activated by the calling party on a per call basis to a mobile subscriber in the system.

Network capabilities for charging

The service should be charged on subscription and/or on a per call basis according to the network operator's policy.

Interworking requirements

None.

Interaction with other services

None.

5.2.3 Alphanumeric paging

Definition

Alphanumeric paging is the third service level. It allows transmission of text information with up to at least 400 characters. This service is for mobile subscribers using receivers with the capability to receive, store and display alphanumeric information in addition to tone-only and numeric paging. The character set is defined in Annex B, table B.2. The system shall transmit the message within a message delivery time depending on the level of priority (see subclause 7.2). The maximum message length that the ERMES system can support is 9000 alphanumeric characters. The network operators shall provide for a maximum message length between 400 and 9000 alphanumeric characters. Messages longer than the maximum message length that a specific receiver can accept, shall not be delivered. The calling party shall be informed that the message is too long (see also subclause 5.2.4 for very long messages).

Procedures

- Provision.

This essential service shall be provided by all network operators. It shall be implemented in the PNC and in alphanumeric receivers. The service may be implemented in the transparent data receiver.

- Normal procedures.

The service can be activated by the calling party on a per call basis to a mobile subscriber in the system.

Network capabilities for charging

The service should be charged on subscription and/or on a per call basis according to the network operator's policy.

Interworking requirements

None.

Interaction with other services

None.

5.2.4 Transparent data paging**Definition**

Transparent data paging is a service allowing transmission of an arbitrary data stream to the receiver. The system shall transmit the message within a message delivery time depending on the level of priority (see subclause 7.2). The use of the data stream is determined by the application chosen by the subscriber. Only the part of the radio channel dedicated to the message allows a full bit transparency. The maximum message length that the ERMES system can support is 64 kbits. The network operators may provide for a maximum message length of less than 64 kbits. Messages longer than the maximum message length that a specific receiver can accept shall not be delivered. The calling party shall be informed that the message is too long.

Very long messages (longer than the defined maximum) can be sent through the ERMES system only if they are split into messages shorter than the maximum length. Users who wish to send such messages, may define a method of linking the parts of the messages together, between calling party and receiver. This method shall be transparent to the ERMES system, i.e. the parts shall be transmitted as separate messages.

Procedures

- Provision.

Provision of this service shall be optional for the network operators. Restrictions on the message length can be imposed by the network operator according to his policy. It shall be implemented in the PNC as well as in the receiver. Lower categories may be implemented in the transparent data receiver.

- Normal procedures.

The service can be activated by the calling party on a per call basis to a mobile subscriber in the system.

Network capabilities for charging

The service should be charged on subscription and/or on a per call basis according to the network operator's policy.

Interworking requirements

None.

Interaction with other services

The bureau service cannot be activated when the transparent data service is used.

5.3 Supplementary services

A supplementary service modifies or supplements a basic service. The offered supplementary services may be used by the subscribers/users at their discretion.