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**European digital cellular telecommunications system (Phase 2);
International Mobile station Equipment Identities (IMEI)
(GSM 02.16)**

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Special Mobile Group (SMG) Technical Committee (TC) of the European Telecommunications Standards Institute (ETSI).

This ETS defines the principle purpose and use of International Mobile station Equipment Identities (IMEI) within the European digital cellular telecommunications system (Phase 2) and corresponds to GSM technical specification GSM 02.16 version 4.3.4.

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-TSs (NOTE).

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

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0 Introduction

0.1 Scope

The purpose of this specification is to define the principal purpose and use of International Mobile station Equipment Identities (IMEI).

The specification GSM 03.03 describes the technical manner of numbering, addressing and identification.

0.2 Normative references

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

- [1] GSM 01.04 (ETR 100): "European digital cellular telecommunication system (Phase 2); Definitions, abbreviations and acronyms".
- [2] GSM 02.17 (ETS 300 509): "European digital cellular telecommunication system (Phase 2); Subscriber identity modules Functional characteristics".
- [3] GSM 03.03 (ETS 300 523): "European digital cellular telecommunication system (Phase 2); Numbering, addressing and identification".

0.3 Definitions and abbreviations

In addition to the following, definitions and abbreviations used in this specification are listed in GSM 01.04.

International Mobile Station Equipment Identity (IMEI)

An "International Mobile Station Equipment Identity" is a unique number which shall be allocated to each individual mobile station equipment in the GSM system and shall be unconditionally implemented by the MS manufacturer.

1 Not used

2 General

As described in specification GSM 02.17, an MS can only be operated if a valid "International Mobile Subscriber Identity" (IMSI) is present. An IMSI is primarily intended for obtaining information on the use of the GSM network by subscribers for individual charging purposes.

Besides the IMSI, the implementation of IMEI is found necessary in order to obtain knowledge about the presence of specific mobile station equipment in the network, disregarding whatever subscribers are making use of these equipments.

The main objective is to be able to take measures against the use of stolen equipment or against equipment of which the use in the GSM system can not or no longer be tolerated for technical reasons.

The IMEI is incorporated in an MS module which is contained within the MS equipment and is physically secured.

This implementation of each individual module should be carried out by the manufacturer who is also responsible for ascertaining that each IMEI is unique and keeping detailed records of produced and delivered MS.

3 Composition of IMEI

The composition of the IMEI shall be such that each individual mobile station equipment can be separately identified.

Information is contained in the IMEI by which the GSM PLMN, after requesting it, can immediately decide whether or not to accept calls made by means of this equipment.

Secondly, the IMEI shall directly or indirectly contain all information which is necessary for the network operator to make relations through its administrative system to trace the equipment to its origin of production. Specification GSM 03.03 describes the structure of the IMEI in detail.

4 Use of the equipment identity register

A network operator can make administrative use of the IMEI in the following manner:

Three registers are defined, known as "white lists", "grey lists" and "black lists". The use of such lists is at the operators' discretion.

The white list is composed of all number series of equipment identities that are permitted for use.

The black list contains all equipment identities that belong to equipment that need to be barred.

Besides the black and white list, administrations have the possibility to use a grey list. Equipments on the grey list are not barred (unless on the black list or not on the white list), but are tracked by the network (for evaluation or other purposes).

5 Procedure

It shall be possible to perform the IMEI check at any access attempt, except IMSI detach, and during an established call at any time when a dedicated radio resource is available, in accordance with the security policy of the PLMN operator.

The network shall terminate any access attempt or ongoing call when receiving any of the answers "black-listed" (ie, on the black list) or "unknown" equipment (ie, not on the white list) from the EIR. An indication of "illegal ME" shall in these cases be given to the user. Furthermore this is equivalent to an authentication failure hence any call establishment or any location updating is forbidden for the MS, it cannot answer to paging, it is just allowed to perform Emergency Calls. Emergency calls must never be terminated as a result of the IMEI check procedure.

6 Use of IMEI in case of emergency calls

Emergency calls can in some PLMNs be made without having to send the subscriber identity (IMSI) to the network. In this case the misuse of MS equipments after placing invalid emergency calls can be restrained by using the equipment identity.

The network request for the equipment identity is sent to the MS after the emergency call has been set-up. The procedure is the same as for normal call set-up.

History

Document history	
September 1994	First Edition
March 1996	Converted into Adobe Acrobat Portable Document Format (PDF)