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European digital cellular telecommunications system (Phase 2); Closed User Group (CUG) supplementary services; Stage 1 (GSM 02.85)

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ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE

Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE

X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 92 94 42 00 - Fax: +33 93 65 47 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 describes Closed User Group (CUG) supplementary services within the European digital cellular telecommunications system (Phase 2) and corresponds to GSM technical specification GSM 02.85 version 4.2.5.

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 ETTs (Phase 2), whilst others may become ETSI Technical Reports (ETRs). GSM-TSs are, for editorial reasons, still referred to in GSM ETs.

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0 Community of interest supplementary services

0.1 Scope

This specification describes the supplementary services belonging to the group COMMUNITY OF INTEREST SUPPLEMENTARY SERVICES.

The general aspects, including definitions and recommended provision, of the description of the GSM supplementary services are given in specification GSM 02.04.

The group of COMMUNITY OF INTEREST SUPPLEMENTARY SERVICES includes one supplementary service:

- Closed user group (section 1).

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 02.04 (ETS 300 503): "European digital cellular telecommunication system (Phase 2); General on supplementary services".
- [3] GSM 03.03 (ETS 300 523): "European digital cellular telecommunication system (Phase 2); Numbering, addressing and identification".
- [4] CCITT Recommendation X.121: "International numbering plan for public data networks".
- [5] CCITT Recommendation X.180: "Administrative arrangements for closed user groups (CUGs)".

0.3 Definitions and abbreviations

Abbreviations used in this specification are listed in GSM 01.04.

1 Closed User Group (CUG)

1.1 Definition

The Closed User Group (CUG) supplementary service enables subscribers, connected to a PLMN and possibly also other networks, to form closed user groups (CUGs) to and from which access is restricted. A specific user may be a member of one or more CUGs. Members of a specific CUG can communicate among each other but not, in general, with users outside the group.

The ability to set up emergency calls remains unaffected.

1.2 Description

1.2.1 Description

An ISDN/MSISDN number shall identify each member of a CUG.

A CUG shall be defined for one or more basic service groups.

CUG members can have additional capabilities that allow them to originate calls outside the group, and/or to receive calls from outside the group. CUG members can have additional restrictions that prevent them from originating calls to other members of the CUG, or from receiving calls from other members of the CUG.

CUG shall remain unaffected when members roam to PLMNs supporting CUG. Roaming subscribers must have the same CUG facilities on the roamed-to PLMN as on the Home PLMN.

When roaming to networks not supporting CUG, the CUG restrictions must be enforced. (However, where possible, the CUG facilities should be supported, see section 1.4.10.)

Each individual subscriber may be a member of a maximum of 10 CUGs.

1.2.2 Applicability to telecommunication services

The CUG supplementary service is applicable to all telecommunication services, except Emergency calls, SMS, dedicated PAD access and dedicated Packet access.

1.2.3 Terminology

MSISDN: a number conforming to the numbering plan and structure specified in GSM Specification 03.03.

CUG member: a user who has subscribed to the CUG supplementary service and is one of the users in the group formed by a particular CUG.

CUG index: a value assigned by the network to identify a CUG.

CUG interlock code (IC): is used by the network (not by the MS) to identify CUG membership.

Preferential CUG: a preferential CUG, which can be specified for each basic service group, is the nominated default CUG to be used when no explicit CUG index is received by the network.

Suppress preferential CUG: a user action to prohibit the use of the preferential CUG, on a per call basis.

Incoming Access (IA): an arrangement which allows a member of a CUG to receive calls from outside the CUG.

Outgoing Access (OA): an arrangement which allows a member of a CUG to place calls outside the CUG.

Suppress OA: a user action to prohibit the use of the OA subscription option, on a per call basis.

Incoming calls barred within a CUG (icb): an access restriction that prevents a CUG member from receiving calls from other members of that group.

Outgoing calls barred within a CUG (ocb): an access restriction that prevents a CUG member from placing calls to other members of that group.

CUG calls: a CUG call is a call which is restricted to a pre-defined group of users.

1.3 Normal procedures with successful outcome

1.3.1 Provision

The CUG supplementary service shall be provided after prior arrangement with the service provider. At provision subscription options should be selected by the served mobile subscriber.

A user may be a member of several CUGs. The service provider defines the number of CUGs, up to the maximum stated in section 1.2.1, which can be allocated to an individual subscriber.

The user shall choose one of the following subscription options for each basic service group applied to the CUG supplementary service. This subscription option may be provisioned on a per basic service group basis or for all basic services:

- CUG calls only;
- CUG with incoming access, i.e. can also receive calls, which are not subject to CUG restrictions;
- CUG with outgoing access, i.e. can also make calls, which are not subject to CUG restrictions;
- CUG with incoming and outgoing access, i.e. can also make and receive calls, which are not subject to CUG restrictions.

A user may subscribe to one of two additional restrictions applying for each particular CUG:

- incoming calls barred within a CUG;
- outgoing calls barred within a CUG.

The network shall provide a subscription option in order to enable the user to specify a preferential CUG, for each basic service group included in at least one of the CUG(s). The user can request that no preferential CUG exists, or that a particular one of her CUGs (or the only one if a single CUG applies) is used as a preferential CUG for the particular basic service group.

If a user has the subscription option outgoing calls barred within a CUG, it is not allowed to specify that particular CUG as a preferential CUG.

The subscription options are shown in Annex 1.

The CUG indices shall be allocated by prior arrangement with the service provider.

The choice of preferential CUG(s) shall be alterable only by service provider action upon request by the served user.

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1.3.2 Withdrawal <https://standards.iteh.ai/catalog/standards/sist/87792927-f2a3-4a53-9388-f73ec0fb347e/sist-ets-300-518-e1-2003>

Withdrawal of the CUG supplementary service, membership of one or more CUGs, will be by the action of the service provider, at the request of the subscriber or CUG management, or for administrative reasons.

1.3.5 Activation

The CUG supplementary service will be activated by the service provider as a result of provision.

1.3.6 Deactivation

The CUG supplementary service will be deactivated by the service provider as a result of withdrawal.

1.3.7 Invocation

Normal call setup procedures shall apply to calls with the CUG supplementary service.

1.3.8 Normal operation with successful outcome

A user having neither the restriction of incoming calls barred within a CUG, nor the restriction of outgoing calls barred within a CUG can make calls to, and receive calls from, members of those CUGs of which the user is a member.

Upon receipt of a call setup attempt to or from a CUG subscriber the network shall check its validity in conjunction with the access capabilities subscribed to.

On successful validation of a CUG call setup attempt the network shall attempt to establish the call to the required destination.