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GLOBAL SYSTEM FOR
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Digital cellular telecommunications system (Phase 2+); Multiple Subscriber Profile (MSP) Service description, Stage 1 (GSM 02.97 version 5.2.0)

WITHDRAWN

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Foreword

This Global System for Mobile communications Technical Specification (GTS) has been produced by the Special Mobile Group (SMG) of the European Telecommunications Standards Institute (ETSI).

This GTS gives an overall view of how this service shall operate both in the PLMN and within the Mobile Station (MS) within the digital cellular telecommunications system (Phase 2/Phase 2+).

The contents of this GTS are subject to continuing work within SMG and may change following formal SMG approval. Should SMG modify the contents of this GTS, it will then be republished 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.

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1 Scope

This European Telecommunication Standard (ETS) gives an overall view of how this service shall operate both in the PLMN and within the Mobile Station (MS). This ETS defines functionality and is not intended to constrain implementation.

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 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 02.30 (ETS 300 907): "Digital cellular telecommunications system (Phase 2+); Man-machine Interface (MMI) of the mobile station (MS)".

[4] GSM 03.40(ETS 300 901): “Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS) Point to Point (PP)”.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS the following definitions apply:

Subscriber: The user who is provisioned with the MSP service

Profile: A profile consists of a set of telecommunications services for the subscriber. In the case of the single numbering scheme there is a unique MSISDN associated with each profile. In the multi-numbering scheme there is the ability to have a unique MSISDN associated with each basic service in each profile.

Service Provider (SP): The organisation through which the subscriber obtains GSM telecommunication services. This may be the network operator or possibly a separate body.

Profile Identification (Profile ID): The profile IDs allow unambiguous identification of each profile. This will allow the subscriber to select the preferred profile for outgoing calls and for subscriber actions. For terminating calls the profile ID shall be part of the notification of the profile.

Registered Profile: The registered profile is that registered by/for the subscriber

Selected Profile: For mobile originated calls and short messages this is the registered profile unless the subscriber explicitly selects an alternative profile. For mobile terminating activties, this is the profile associated with the MSISDN addressed.

Mobile Terminating Activities: These include mobile terminating calls, short messages (SMS MT) and Call Independent Supplementary Services (e.g. NI-USSD).

Default Profile: Profile to be used when roaming to non-supporting network

3.2 Abbreviations

For the purposes of this ETS the following abbreviations apply, in addition, abbreviations used in this GTS are listed in GSM 01.04 (ETR 350)[1].

MSP Multiple Subscriber Profile

4 Description

Multiple Subscriber Profile is an optional service to enable mobile subscribers to have several profiles associated with a single SIM and a single IMSI, with each profile being a subscription option. Each profile may be used for mobile originated and mobile terminated calls.

Up to four different profiles can be provisioned against a subscriber using the MSP feature. This will allow the subscriber to separate her telecommunication service needs into different identities (e.g. business and home).

The charges accrued for services shall be associated with the appropriate profile, allowing separate charging for each profile.

A supporting visited network shall indicate [on the billing record] for charging purposes the profile used.

4.1 Applicability to telecommunication services

The applicability of this supplementary service is defined in GSM 02.04.

5 Functional requirements

5.1 Handling of the MSP Service

This clause describes the normal procedures for the handling of the MSP service.

5.1.1 Provision

The MSP service shall be provided after prior arrangement with the service provider. If the MSP service is provisioned for the subscriber at the first time the subscriber shall also be provisioned with a least two profiles.

5.1.2 Withdrawal

Withdrawal of the MSP service shall be done by either the service provider at the subscriber's request or for administrative reasons. The MSP service shall be withdrawn when there is only one profile remaining.

5.1.3 Activation

The MSP service is activated by the service provider as a result of provision.

5.1.4 Deactivation

The MSP service is deactivated by the service provider as a result of withdrawal.

5.1.5 Invocation

The MSP service is invoked by mobile originated calls and short messages and by mobile terminating activities.

5.2 Handling of the Profile

This subclause describes the normal procedures for selecting the registered profile for mobile originated calls, short messages and call independent supplementary service related activities. For mobile terminating activities the profile is selected automatically by association with the MSISDN addressed.

5.2.1 Provision

The provision of profiles (up to a maximum of four) is provided by prior arrangement with the service provider. The subscriber may select any provisioned profile on a per call basis or register one of them. The subscriber will nominate one of their provisioned profiles as the default profile to be used when roaming to non-supporting networks. The subscriber may subsequently nominate an alternative default (i.e. roaming) profile, nevertheless the default profile can only be changed by the service provider.

5.2.2 Withdrawal

The Service Provider shall be able to withdraw profiles. The registered profile shall never be withdrawn, and consequently if the registered profile needs to be withdrawn the service provider shall first register the subscriber onto another profile.

5.2.3 Registration

Registration is the procedure by which information is written to the network to allocate a particular profile to be used for all outgoing calls and supplementary service related activities. Registration to a profile shall take place either by the service provider or with an appropriate control procedure by the subscriber as defined in GSM 02.30. At all times only one profile shall be registered.

5.2.4 Selection

The profile to be used for mobile originated calls and short messages is selected either implicitly or explicitly:

- Implicit selection occurs if the served subscriber does not indicate a profile ID when initiating a call or short message. In this case the selected profile is the registered profile.

- Explicit selection occurs if the served subscriber does indicate a profile ID when initiating a call or short message.

The control procedure used to select the profile is as defined in GSM 02.30.

For mobile terminating activities, the profile is selected according to the MSISDN addressed.

5.2.5 Erasure

A previous registration can be erased in the following ways:

- the subscriber can register to another profile which causes the previous registration to be overridden;
- the registered profile is erased as a result of withdrawal of the MSP service.

5.2.6 Interrogation

The subscriber shall be able to interrogate which profile is the registered profile and all other available profile IDs, with an appropriate control procedure as defined in GSM 02.30 [3].

5.3 Normal operation with successful outcome

5.3.1 Mobile Originating Calls

Mobile originating calls shall be handled according to the selected profile.This shall be the registered profile unless an alternative is explicitly selected by the subscriber. Profiles are registered and selected according to control procedures in GSM 02.30.

Any activity that is normally chargeable shall be identified against the selected profile.

5.3.2 Mobile Terminating Activities

The MSISDN addressed shall be used to determine the profile to be used. If there are any active supplementary services, which are applicable to the telecommunication service within the profile, then those supplementary services shall apply. For example, if the MS is busy in a call, further incoming call attempts shall be rejected or busy, even if they were on a different profile. This shall not prevent the normal operation of Call Waiting or Call Forwarding if appropriate.

The serving network shall indicate the profile towards the mobile station. The mobile station may use this information to indicate to the user the profile used for the mobile terminating activities.

Any activity that is normally chargeable shall be identified against the profile used for the mobile terminating activity.

5.3.3 Mobile Originating Call Independent Supplementary Service Activities

The activity shall be handled according to the registered profile.

5.3.4 Call Related Supplementary Service Activities

The handling of call related supplementary service activities is described in clause 7.

5.4 Exceptional procedures or unsuccessful outcome

5.4.1 Roaming into networks not supporting MSP

The default profile shall be used for outgoing traffic when the subscriber roams to a non-supporting network.

Incoming calls to non-default profiles when roaming to a non-supporting network will be treated as though the subscriber was not reachable.

NOTE: If the subscriber is to roam and knows/believes that the roaming network is non-supporting, then the subscriber can use call forward not reachable to forward calls to the default profile. This will allow incoming calls to be received from other profiles.

5.4.2 Registration or Selection of a profile that is already registered

If there is an attempt to register a profile that is already the registered profile, the registration shall continue uninterrupted and the user shall not be informed.

If there is an attempt to select a profile that is already the registered profile, the selection shall continue uninterrupted and the user shall not be informed.

5.4.3 Registration or Selection of a non-provisioned profile

If there is an attempt to register a profile that has not been provisioned, the registration attempt shall fail and user shall be informed. The registered profile shall remain unchanged.

If there is an attempt to select a profile that has not been provisioned the selection and associated call activity shall fail. The user shall be informed. The registered profile shall remain unchanged.

5.4.4 Registration or Selection attempts where MSP is not provisioned

If there is an attempt by a subscriber who does not have MSP provisioned to register a profile, the registration attempt shall fail and subscriber shall be informed.

If there is an attempt by a subscriber who does not have MSP provisioned to select a profile, the selection attempt shall fail and subscriber shall be informed.

6 Interaction between Profiles

For parallel transactions, different profiles can be used e.g. outgoing calls and incoming short messages.

7 Interaction with supplementary services

Supplementary services shall be provisioned on a profile basis. . Registration and activation data that can be different for different basic service groups can also be different in different profiles.

NOTE: To avoid user confusion when moving between profiles, it may be useful to provision some supplementary services (e.g. CW, HOLD) across all profiles.

The profile used when a supplementary service is invoked will be subject to the charging principles and invocation requirements relevant to that supplementary service. The service provider may decide which profiles to charge for the service provision.

7.1 Line Identification Services

The profile used for the incoming or outgoing call shall be used for the line identification services.

7.2 Call Hold (HOLD)

The HOLD service can only be invoked if the profile for that active call has the HOLD service provisioned.

7.3 Call Waiting (CW)

CW for an incoming call can only be invoked if the profile for the ongoing call has the CW service provisioned and active; although the incoming call may be on any profile.

7.4 Call Forwarding

The subscriber shall be able to forward calls to from one profile to another profile.

NOTE: This allows the possibility when roaming to a non-supporting network to forward calls from the non-default profiles to the default profile to ensure the calls can be received.

7.4.1 Call forwarding unconditional (CFU)

If the requested telecommunications service in the profile used for the incoming call has an active and operative call forwarding, the call forwarding shall be invoked in the normal way.

7.4.2 Call Forwarding on busy (CFB)

If the requested telecommunications service in the profile used for the incoming call has an active and operative call forwarding on mobile subscriber busy (CFB), the call forwarding shall be invoked in the normal way.

7.4.3 Call forwarding on No Reply (CFNRy)

If the requested telecommunications service in the profile used for the incoming call has an active and operative call forwarding, the call forwarding on no reply (CFNRy) shall be invoked in the normal way.

7.4.4 Call forwarding on not reachable (CFNRc)

If the requested telecommunications service in the profile used for the incoming call has an active and operative call forwarding, the call forwarding on not reachable (CFNRc) shall be invoked in the normal way.

7.5 Multi Party Service (MPTY)

The MPTY service can only be invoked or a MPTY call controlled or extended if MPTY is provisioned for the served subscriber for each profile(s) associated with the MPTY call leg(s).

7.6 Closed User Group (CUG)

An MO call shall be treated according to the rules of the CUG service if CUG is provisioned for the selected profile. An MT call shall be treated according to the rules of the CUG service if CUG is provisioned for the profile defined by the called MSISDN.

7.7 Advice of Charge (AoC)

If subscribed to, AoCI or AoCC shall be applicable to the selected profile. Each profile shall have a separate meter (ACM) and a separate upper limit (ACMmax) when AoCC is subscribed. There shall be an overall meter for all profiles, with its own upper limit for AoCC if subscribed. For normal operation both the individual meter applicable to the selected profile and the overall meter shall be incremented.

The overall meter shall apply in cases of roaming to non-supporting networks. this overall meter is the only one that shall be incremented.When an MSP-supporting SIM is placed in a non-MSP mobile, only the overall meter shall be incremented.

7.8 Call Barring

Barring options shall be applicable on a per profile basis.

7.9 Explicit Call Transfer (ECT)

ECT can only be invoked if the service is provisioned for each profile which governs a call leg to be joined by the ECT service.

7.10 CCBS

The CCBS service shall be provisioned on a per profile basis. The option not to be a target of CCBS Requests shall also apply on a per profile basis. If the subscriber is informed of CCBS recall, the profile in use when the CCBS request was activated shall be indicated with the recall notification and shall be used for the CCBS call. If the subscriber has registered onto a different profile from that originally used for the CCBS request activation, then this profile shall be automatically selected for the CCBS call, and the registered profile is not changed. If the subscriber activates a CCBS request on a profile that is not the default profile and subsequently moves to a non-supporting MSP network then, if the CCBS recall matures, the corresponding CCBS request shall be suspended until the subscriber next registers on a network supporting MSP.

The limit to the number of outstanding CCBS requests that can be activated by the subscriber shall apply regardless of the number of profiles.

The limit to the number of outstanding CCBS requests that can be activated against the subscriber shall apply regardless of the number of profiles.

The call independent CCBS operations ‘deactivation of all requests’ and ‘general interrogation’ shall apply across all profiles.

In addition to the normal information provided as a result of status requests (interrogations) by the CCBS subscriber of the CCBS service, the information will include indication of the profile upon which each request was activated.

NOTE: The check for a particular CCBS request is based upon called party number and the basic service information, profile information is not used for this check.

7.11 eMLPP

eMLPP shall be provisioned on a per profile basis. Where eMLPP is not explicitly provisioned on a profile, the default priority level shall be assumed.

Normal operation on a per profile basis is assumed.

8 Interaction with other services

8.1 The Multi-Numbering Scheme

Each profile may employ the single-numbering scheme or the multi-numbering scheme. The multi-numbering scheme is described in GSM 02.01 [2]. For each of the profile defined above, it shall be possible for the subscriber to be allocated different MSISDNs for different basic services.

8.2 The Short Message Service

The Short Message Service is described in GSM 03.40 [4]. For incoming short messages, the profile used shall be clearly indicated to the user. This indication to the user shall be retained with the message and made available if it is subsequently read from the SIM. For mobile originated short messages, indication of the profile used is included in the message by the network and can be implied by the MSISDN associated with the selected profile.

8.3 Interactions with CAMEL

CAMEL services shall be provisioned on a per profile basis.

Information to identify the selected profile shall be passed to the CAMEL server at call set up. The CAMEL server cannot change the profile ID registered by the subscriber in the network.

The CAMEL server can change the selected profile ID. Should this be performed for mobile originated calls, the subscriber shall be informed.

For call independent supplementary service procedures for CAMEL based services, information to identify the registered profile shall be passed to the CAMEL server.

8.4 Interactions with OR

No interaction

NOTE: It is a HPLMN option to allow or deny OR of forwarded calls where the HPLMN recognises that the IPLMN does not support MSP. This is due to the requirement to include an indication of the profile ID in call detail records which may be raised in the IPLMN and sent to the HPLMN.

8.5 Operator Determined Barring

ODB shall apply on a per profile basis.

8.6 Roaming restrictions

These will apply on a per subscriber basis.

9 Cross-Phase Compatibility

The default profile will be sent to the visited network and can be addressed by non-supporting networks.

Mobile terminated calls to a non-supporting MS shall still be accepted but the indication of profile may not be supported.

Annex A: Change Request History

Change history					
SMG No.	**TDoc. No.**	**CR. No.**	**Section affected**	**New version**	**Subject/Comments**
SMG#19	367/96	None		2.0.0	Submitted for approval (approved)
SMG#22	306/97 SMG1 106/97	A002		5.1.0	MSP Revision of Stage 1 desciption in line with service principles and phasing
SMG#23	SMG 651/97	A003	5.1.0	5.2.0	Completion of the Stage 1 description of MSP.A number of interactions with other services were identified as missing. These have been added and necessary changes made to associated sections of other recommendations. Various sections have been affected.

History

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