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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 5.1.1)

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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 telecommunications 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 activities** this is the registered profile unless the subscriber explicitly selects an alternative profile to be used for that mobile originated activity. For mobile terminated calls and short messages, this is the pofile associated with the MSISDN addressed.

Mobile Originated Activities: These include mobile originated calls and short messages (SMS MO).**Default Profile**: Profile to be used when roaming to non-supporting network

[Profile Data: A profile is a set of subscriber data (identified by an unique MSISDN in the case of single-numbering scheme , or several MSISDNs in the case of multi-numbering scheme) which may include the following information:

- Operator determined barring data

- Roaming restriction data
- Subscription restriction data
- Basic service data
- Supplementary service data]

3.2 Abbreviations

For the purposes of this ETS the following abbreviations apply, in addition, abbreviations used in this ETS are listed in GSM 01.04 (ETR 100)[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 (ETS 300 503)

4.2 Mobile Originated Activities

The subscriber shall be able to select which profile shall be used for mobile originated activities. 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.

4.3 Mobile Terminated Activities

The profile used for mobile terminated activities is that associated with the MSISDN addressed. 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.

Each profile may employ the single-numbering scheme or the multi-numbering scheme (as defined in GSM 02.01 [2]), as supported by the subscriber's home network, for specifying different bearer services when calling from the PSTN.

5 Functional requirements

5.1 Handling of the MSP Service

This section 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 activities and mobile terminated traffic.

5.2 Handling of the Profile

This section describes the normal procedures for selecting the registered profile for mobile originated activities and call independent supplementary service related activities. For mobile terminated calls the profile is automatically selected by the profile associated with the called MSISDN.

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 to it. The subscriber will nominate one profile as the default profile to be used when roaming to non-supporting network. The default (i.e.roaming) 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

In order to select an alternative profile to the registered profile, the user must enter the profile ID of the new profile. The control procedure used to select the profile is as defined in GSM 02.30.

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 Activities

The activity shall be handled according to the selected profile.

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

5.3.2 Mobile Terminating Traffic

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.

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 traffic.

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

5.3.3 Call Independent Supplementary Service Activities

The activity shall be handled according to the registered profile.

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.

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, CH) 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 (CH)

The CH service can only be invoked if the profile for that active call has the CH 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. The overall meter shall apply in cases of roaming to non-supporting networks.

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. If the subscriber is informed of CCBS recall, the profile in use when the CCBS request was activated 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.

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.

7.11 Operator Determined Barring

ODB shall apply on a per profile basis.

7.12 Roaming restrictions

These will apply on a per subscriber basis.

8 Interaction with other services

8.1 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 outgoing short messages, indication of the profile used is included in the message by the network.

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 will 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)
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