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**Digital cellular telecommunications system (Phase 2+) (GSM);
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Stage 1
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Foreword

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1 Scope

The present document specifies the stage 1 description for the Follow Me feature.

The Follow Me feature enables a mobile subscriber A to manipulate the Follow Me data of a party B in such a way that - under certain conditions - subsequent calls directed to party B will be forwarded to subscriber A.

The feature is described from the service subscriber's and user's point of view, in particular:

- the procedure for normal operation with successful outcome;
- the action to be taken in exceptional circumstances;
- the interaction with other GSM services and features.

This TS does not deal with the Man-Machine Interface (MMI) requirements, but makes reference to the appropriate specifications.

Any interaction with other services and/or networks not dealt with in this specification are outside the scope of this TS.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
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- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
 - [2] 3GPP TS 22.004: "General on supplementary services".
 - [4] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the Mobile Station (MS)".
 - [5] 3GPP TS 22.082: "Call Forwarding (CF) supplementary services - Stage 1".
 - [6] 3GPP TS 22.085: "Closed User Group (CUG) supplementary services - Stage 1".
 - [7] 3GPP TS 22.041: "Operator Determined Barring (ODB) - Stage 1".
 - [8] 3GPP TS 22.078: "Customized Applications for Mobile network Enhanced Logic (CAMEL); Service definition (Stage 1)".
 - [9] 3GPP TS 22.079: "Support of Optimal Routing (SOR); Service definition (Stage 1)".
 - [10] 3GPP TS 22.090: " Unstructured Supplementary Service Data (USSD) Stage 1"
 - [11] 3GPP TS 42.031: "Fraud Information Gathering System (FIGS); Service description - Stage 1"
 - [12] 3GPP TS 22.101: "Service Principles".
-

3 Definitions, symbols and abbreviations

3.1 Definitions

initiating subscriber: the mobile subscriber which modifies the Follow Me data of the remote party.

remote party: Is characterised by a number in E.164 format defined in the numbering plan of a PLMN operator. The Follow Me feature enables the initiating subscriber to modify the Follow Me data associated with this number. In general this number is not assigned to a subscriber. In particular cases the remote party is a subscriber of the PLMN and the number denotes her basic MSISDN.

FM service supervisor: Is an initiating subscriber who is allowed to modify the Follow Me data of a remote party who has been registered to another initiating subscriber for the Follow Me application. The FM service supervisor shall be authorised by her network operator.

3.2 Abbreviations

For the purposes of this TS the following abbreviations apply, in addition, abbreviations used in this TS are listed in 3GPP TS 21.905 [1].

FM	Follow Me feature
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4 Description

Follow Me enables an initiating mobile subscriber A to have control over the Follow Me data of a remote party B. Initiating Subscriber A shall be able to manipulate the Follow Me data of remote party B such that subsequent calls directed to remote party B are forwarded to initiating subscriber A.

Initiating subscriber A needs to have FM provisioned by her service provider. In case remote party B is a subscriber she needs to have FM provisioned by her service provider too.

The FM service supervisor shall be able to modify the Follow Me data of the remote party who has been registered to another initiating subscriber.

It remains in the responsibility of a FM provisioning service provider to confine

- a.) the range of remote parties for which a FM provisioned subscriber may become initiating subscriber
- b.) the range of potential initiating subscribers for a remote party.

The mobile subscriber who has been provisioned Follow Me is able to use the following control operations:

Registration	available to the initiating subscriber
Interrogation	available to the initiating and remote party in case the remote party corresponds to a subscriber
Erasure	available to the initiating and remote party in case the remote party corresponds to a subscriber

(There is no explicit activation or deactivation.)

The FM service supervisor is able to use the following control operations:

Interrogation	
Erasure	(forced erasure)

NOTE 1: The functionality of the Follow Me feature is equivalent to the Call Forwarding Unconditional Supplementary Service (see 3GPP TS 22.082 [5]), controlled by initiating subscriber A and effecting remote party B.

NOTE 2: The Follow Me feature is designed in such a way that the requirements of "functional addressing", which is needed for GSM-Railway operators, can be met. The concept of "functional addressing" enables a subscriber to set up a call to a "function" - e.g. the conductor - on a "train". The Follow Me feature identifies this "function" with the remote party B. Consequently a "functional number" is the equivalent to the number of remote party B (e.g. the MSISDN of a subscriber B). A call to that "functional number" (the conductor on a particular train - to stay with the example) will be forwarded to the MS of the person, who is on duty as a conductor at this time for this train. In the context of the Follow Me feature, this person (the train conductor) constitutes the "initiating subscriber" A, who has registered Follow Me with respect to the remote party B (the "function" train conductor).

4.1 Normal Operation

Due to reduced security requirements to the Follow Me feature the service shall not be offered in standard operations of public 3GPP networks. In railway operations it must be enabled by definitive action on the part of the operator.

Fraud Information Gathering System (FIGS) as specified in [11] can be used to protect in CAMEL based inter-working networks.

The Follow Me feature shall be controlled by means of Subscriber Controlled Input using USSD.

5 Applicability to telecommunication services

3GPP TS 22.001 describes the principles of the Telecommunication services provided in a PLMN. It also defines the concepts of Telecommunication services and describes their characterization by appropriate attributes. Bearer services and Teleservices, which are offered by a PLMN in connection with other networks, are defined in 3GPP TS 22.002, 3GPP TS 22.003 and 3GPP TS 22.101. A list of basic service groups can be found in 3GPP TS 22.004.

Follow Me is applicable to the following telecommunication services:

Table 1: Applicability of the Follow Me feature to telecommunication services

Feature	Telephony	Emergency Call	SMS PTP		SMS-CB	Fax	cct Data		Voice Group Services	
	TS11	TS12	TS21	TS22	TS 23	TS 6x	BS2x, BS3x		TS 91	TS 92
Follow Me	Yes					Yes	Yes		No ¹	No ¹

NOTE 1: The feature is in general not applicable for Voice Group Services. However a dispatcher may be an initiating subscriber or a remote party for the Follow Me feature.

EDITOR's Note: The applicability of FM to SMS is for further study.

6 Normal procedures with successful outcome

6.1 Provision

Follow Me shall be provided after prior arrangement with the service provider. Follow Me will be provisioned for all Basic Services subscribed to and to which it is applicable.

NOTES:

- A Follow Me provision is required for the initiating subscriber and for the remote party in case the remote party corresponds to a subscriber.
- If Follow Me is provisioned for a mobile subscriber she may assume the role of an initiating subscriber and/or the role of a remote party.
- A Follow Me provisioning service provider may confine:
 - a.) the range of remote parties for which a FM provisioned subscriber may become initiating subscriber
 - b.) the range of potential initiating subscribers for a remote party.
 - c.) the range of remote parties for which a FM provisioned subscriber may become FM service supervisor.

NOTE: (Health warning on security) The Follow Me feature is designed in such a way as to meet the security requirements of GSM-Railway operators. If the Follow Me feature is to be used by other operators - in particular if the remote party corresponds to a subscriber - operators are strongly advised to care for additional suitable security mechanisms to protect the remote party from potential harm by misuse of FM. These mechanisms are out of scope of this specification.

To support such mechanisms the possibility is foreseen to convey additional operator-specific information in the registration, interrogation and erasure procedures to the PLMN of the remote party. It should however be noted, that this is not a very secure mechanism. Operators should try to use existing security mechanisms where possible

6.2 Withdrawal

Follow Me will be withdrawn at the subscriber's request or for administrative reasons.

6.3 Registration

Follow Me shall be registered with an appropriate control procedure by the initiating subscriber.

The initiating Subscriber registers the Follow Me feature with respect to a particular remote party.

The initiating subscriber shall provide the following information to the network:

the number of the remote party (e.g. the Basic MSISDN of a subscriber);

The initiating subscriber shall receive an indication if the FM registration request was accepted or rejected by the network.

As an operator's option additional information (such as passwords) for registration may be required from the initiating subscriber. The registration procedure shall transport this information from the initiating subscriber to the network of the remote party. This information shall be coded as a USSD string with a length not exceeding 30 characters. The content of this information and the use of it are out of scope of this specification.

NOTE 1: The Follow Me feature may, at an instant, be registered to an initiating subscriber with respect to several remote parties. Conversely, a remote party can be registered only to one initiating subscriber at a time.

6.4 Erasure

A previous FM registration can be erased in either of the following ways:

- a) The initiating subscriber can specifically erase her previous registration with an appropriate control procedure.
- b) In case the remote party corresponds to a subscriber the remote party can erase any previous registration with an appropriate control procedure.
- c) The FM service supervisor can erase any previous registration to any remote party with an appropriate control procedure (forced erasure).

The subscriber who initiates the FM erase request shall be informed of the outcome of the request by the network.

For forced erasure by the FM service supervisor the initiating subscriber whose registration of Follow Me with respect to a remote party has been erased shall be informed of the successful forced erasure by the network.

As an operator's option additional information (such as passwords) for erasure may be required from the subscriber. The registration procedure shall transport this information from the subscriber to the network of the remote party. This information shall be coded as a USSD string with a length not exceeding 30 characters. The content of this information and the use of it are out of scope of this specification.

6.5 Activation

Follow Me is activated by registration.