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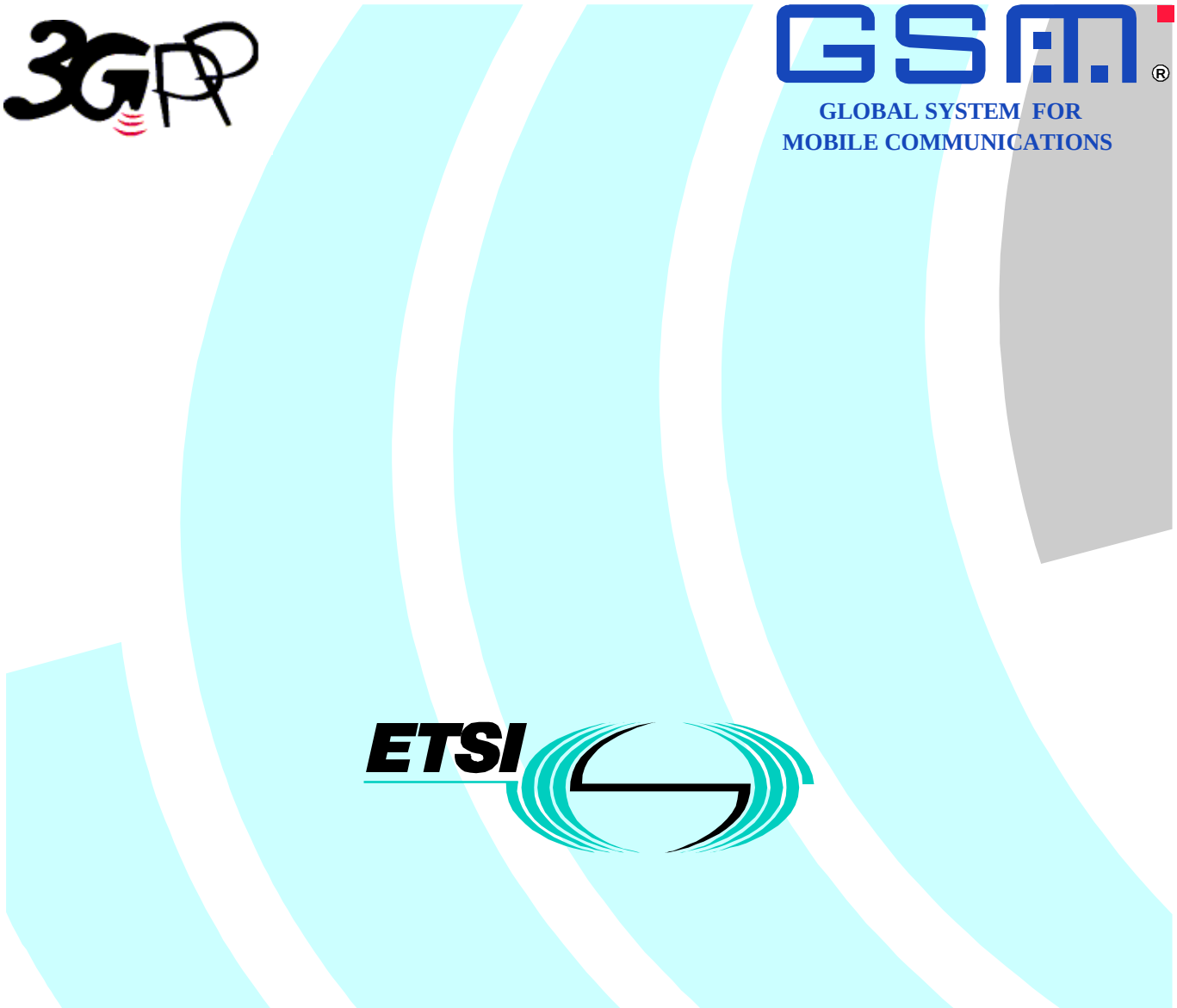
Technical Specification

Digital cellular telecommunications system (Phase 2+);
Immediate Service Termination (IST);
Stage 2
(3GPP TS 43.035 version 4.0.0 Release 4)



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Foreword

This Technical Specification (TS) has been produced by the ETSI 3rd Generation Partnership Project (3GPP).

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

This TS specifies the stage 2 description of the Immediate Service Termination (IST) service which provides the means for the HPLMN to terminate all the activities of an HPLMN subscriber in a VPLMN.

Two implementations of IST are described: an implementation based on CAMEL, and an implementation based on a new MAP command.

2 Normative 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.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".

[2] 3GPP TS 42.032: "Digital cellular telecommunications system (Phase 2+); Immediate Service Termination (IST), Service description - Stage 1".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this specification the following definition apply:

Subscriber activities: subscriber activities that must be terminated. These can be call related events (e.g. call set-up, call termination) or the invocation of call related and call independent supplementary services (e.g. Call Hold, Call Waiting, Call Transfer, Call Forwarding, Unstructured Supplementary Service Data (USSD)).

3.2 Abbreviations

Abbreviations used in this specification are listed in GSM 01.04.

For the purposes of this specification the following abbreviations apply:

IST	Immediate Service Termination
FDS	Fraud Detection System
FIGS	Fraud Information Gathering System
MO	Mobile Originated
MT	Mobile Terminated
O-CSI	Originating CAMEL Subscription Information
T-CSI	Terminating CAMEL Subscription Information

4 Information flows

4.1 CAMEL implementation

For the Customised Applications for Mobile network Enhanced Logic (CAMEL) implementation of Immediate Service Termination (IST) for a particular subscriber, an "IST" command (in reality, the CAMEL message "ReleaseCall") must be sent by the gsmSCF of the home PLMN to the gsmSSF controlling the call, for all the calls of the subscriber.

Prior to the sending of the IST command, the Mobile Application Part (MAP) command "Cancel Location" should be sent to the VLR at which the subscriber is registered. This will ensure that the subscriber cannot re-commence service at that VLR after the IST command has been executed. See Annex B of 3GPP TS 42.032.

The compilation of the list of MSCs to which the IST command should be sent is outside the scope of this specification. However, if a PLMN operator wishes to implement IST using CAMEL, the list of MSCs to which the IST command should be sent for a subscriber is the list of MSCs with which the CAMEL server has a relationship for that subscriber. If this data is not available directly from the CAMEL server, it may be obtained using Fraud Information Gathering System (FIGS) or an Fraud Detection System (FDS) (if the HPLMN is using CAMEL for IST then it is likely that it will also be monitoring the subscriber's activities using FIGS level 2 or 3, which use CAMEL).

4.2 Non-CAMEL implementation

FFS.

5 Functional behaviour - CAMEL implementation

This clause describes the implementation of IST using CAMEL. CAMEL can be used to terminate all the mobile originated (MO), mobile terminated (MT) and forwarded (CF) calls of a subscriber, provided there is a control relationship between the CAMEL server (the gsmSCF) in the HPLMN and the MSC (visited MSC or GMSC) (the gsmSSF) controlling the call or forwarding leg.

5.1 Subscriber settings

The subscriber is marked as a CAMEL subscriber by setting Originating CAMEL Subscription Information (O-CSI) and Terminating CAMEL Subscription Information (T-CSI) in the subscriber data stored in the HLR of the HPLMN. The O-CSI is sent to the VPLMN when the subscriber first registers in the VPLMN; the T-CSI is sent to the GMSC in the response to a request for routeing information. If the subscriber is being monitored using FIGS, it will already be marked as a CAMEL subscriber.

If the HPLMN wishes to mark a subscriber as a CAMEL subscriber when the subscriber is already registered in the VPLMN, it modifies the subscriber data in the VPLMN using the command *Insert Subscriber Data*.

5.2 DP Settings

A call cannot be terminated using CAMEL unless there is a control relationship between the gsmSCF and the gsmSSF controlling the call. To ensure that the IST command can be used at any point in the duration of a call, right up to the end of the call, there must be a control relationship until the end of the call.

A "control relationship" exists where there is at least one armed DP in the gsmSSF. This can be achieved if the DP *O/T_Disconnect* (which will trigger the sending of an *Event_Report_BCSM* to the gsmSCF) is set for the call.

If the subscriber is being monitored using FIGS level 2 or 3, the subscriber will already be marked as a CAMEL subscriber and DP *O/T_Disconnect* will already have been set.

If the subscriber is not being monitored using FIGS levels 2 or 3 then *O/T_Disconnect* is set with command *Request_Report_BCSM_Event* sent to the gsmSSF by the gsmSCF after the gsmSCF has received notification of a call attempt via the *Initial_DP* message received from the gsmSSF.

Initial_DP notifies the gsmSCF of call attempts. If the gsmSCF wishes to be notified of the success or failure of a call attempt, and so not be keeping a register of "calls" that may not have commenced, DP *O/T_Answer* can be set to inform the gsmSCF when a call is answered by the calling party.

If the **non**-reception of an *Event_Report_BCSM* indicating call answer is **not** sufficient indication to the HPLMN of the failure of a call attempt, DPs *O_Route_Select_Failure, O/T_Busy, O/T_No_Answer, O/T_Abandon, O/T_Not_Reachable* can be set to inform the gsmSCF explicitly if the call attempt fails. If the various failure DPs are not armed, the gsmSCF can still deduce that the call attempt has failed because the gsmSSF will terminate the relationship when the call fails by sending message *Abort* to the gsmSCF.

All these DPs can be set via the *Request_Report_BCSM_Event* sent to the gsmSSF by the gsmSCF after receiving the *InitialDP* message. If all these DPs are set then the subscriber is in fact being monitored with the equivalent of FIGS level 2 monitoring.

5.3 Call termination

The HPLMN will be informed of the call attempts (MO, MT and CF) of the subscriber with message *InitialDP*. This message will give the address of the gsmSSF (=MSC) controlling the call. The call can be terminated by the gsmSSF at any time by sending message *ReleaseCall* to the controlling gsmSSF. The gsmSSF will then terminate the call.

6 Functional behaviour - Non-CAMEL implementation

FFS.

7 Control of IST

Definition of the method used by a PLMN to decide which subscribers to use IST upon is outside the scope of this specification. However, it is likely that the decision will be made by some sort of FDS within the PLMN. The interface between the FDS and the PLMN node that sends the IST command to the VPLMN (the CAMEL server for a CAMEL implementation of IST) is outside the scope of this specification.

Annex A (Informative): Change History

Status of Technical Specification GSM 03.35 (IST stage 2)		
Date	**Version**	**Comments**
		No Phase 1 version
April 1998	0.1.0	to SMG10 plenary, Lund, 6-9 April 1998 by the rapporteur
April 1998	0.2.0	output SMG10-WPB, Lund, 6-9 April 1998
June 1998	0.3.0	Minor editorial changes made by rapporteur
June 1998	1.0.0	specification to SMG#26 for information
July 1998	2.0.0	specification to SMG#27 for approval
October 1998	7.0.0	specification approved by SMG#27
April 2000	8.0.0	Release 1999 version

Change history								
Date	**TSG #**	**TSG Doc**	**CR**	**Rev**	**Cat**	**Subject/Comment**	**Old**	**New**
03-2001	SP-11	-	-	-	-	Upgrade to Release 4 (and 3GPP numbering)	03.35 v 8.0.0	43.035 v 4.0.0

History

Document history		
V4.0.0	March 2001	Publication