3GPP TSG-SA#7
Madrid, SPAIN, 15-17 March 2000

TSGS#7(00)0152

Agenda Item: 5.1.3

Source: T2 & T3 chairmen

Title: CR 22.038r1 "Addition requirements for bearer independent data transfer feature"

Document for: Approval

This CR is an updated version of the CR 22.038 contained in SP-000058 . It takes in to account concerns raised during TSG-SA #7 about the inclusion of specific technical requirements in a stage one serivce description.

CHANGE REQUEST No :	**002r1**	*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*	
Technical Specification GSM / UMTS:	22.038	Version:	3.0.0
Submitted to SMG *list SMG plenary meeting no. here ↑*	#31	For approval	**X**
		for information	
		without presentation ("non-strategic")	**X**
		with presentation ("strategic")	

PT SMG CR cover form. Filename: crf26_3.doc

Proposed change affects: *(at least one should be marked with an X)* SIM [**X**] ME [**X**] Network [ ]

Work item: TEI

Source: T2 & T3 chairmen **Date:** 16 March, 2000

Subject: Addition requirements for bearer independent data transfer feature

Category: *(one category and one release only shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature	**X**		Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	**X**
				UMTS	

Reason for change: The aim of this CR is to introduce additional requirements dedicated to the bearer independent data transfer feature.
This functionality enables the SIM to establish a data channel with a Server on the preferred available bearer and then to exchange data over this channel independently of the previously selected bearer.

Clauses affected: 2.1, 3.1, 6.2, 6.3, 8.1, 9

Other specs affected:

Other releases of same spec		→ List of CRs:
Other core specifications		→ List of CRs:
MS test specifications / TBRs		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

2.1 Normative references

[1] GSM 01.04 (ETR 350): Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms

[2] GSM 02.48: Security mechanisms for the SIM Application Toolkit; Stage 1

[3] GSM 03.48: Security mechanisms for the SIM Application Toolkit; Stage 2

[4] GSM 11.11: Specification of the Subscriber Identity Module - Mobile Equipment interface

[5] GSM 11.14: Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment interface.

[6] GSM 02.19: Subscriber Identity Module Application Programming Interface (SIM API)

[7] GSM 04.08: Mobile radio interface layer 3 specification

[8] GSM 03.60: GPRS service description stage 2

[9] GSM 03.64: GPRS overall description of the GPRS radio interface stage 2

[10] GSM 07.60: GPRS mobile station supporting GPRS

[11] GSM 02.90: Unstructured Supplementary Service Data (USSD) Stage 1

[12] GSM 03.90: Unstructured Supplementary Service Data (USSD) Stage 2

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this TS the following definitions apply:

applet: a small program that is intended not to be run on its own, but rather to be embedded inside another application
application: SAT information in the form of software, applications, associated resources (e.g. libraries) and/or data
bearer independent protocol: Mechanism at the interface between the SIM and the ME which provide access to the data bearers supported by the ME.
content: data and/or information associated with, or independent of, a particular application which may be presented to or collected from a user
data channel: a channel which allows the SIM to exchange data via the netword using a selected bearer
link: radio resource
SAT service: a service enhanced (or made possible) by SAT technology
SAT execution environment: the SAT execution environment provides the mechanisms to operate single or multiple SAT-applications
SAT serving environment: an entity which delivers SAT services to the subscriber. This is normally the PLMN operator, but could be an entity with SAT responsibility (which may have been delegated by the PLMN operator)
SAT subscriber: the owner of a GSM subscription who has entered into an agreement with a SAT serving environment for SAT services. Access to SAT services though other types of networks is out of scope of this specification
SAT server: a node supporting SAT services in the SAT service environment
user: the user of a SAT MS , who may or may not be the subscriber
…

6.2 SAT proactive capability

The SAT proactive capability is a mechanism whereby the SIM can request specific actions to be taken by the ME by issuing "proactive commands" thus establishing and maintaining an interactive dialogue with the user and/or communicating with the network..

The ME shall inform the SIM of the success or otherwise of each command issued to it by the SIM, and also indicate the command details and if applicable add more specific information.

The proactive command set allows the SAT to instruct the ME to:

1. display text supplied by the SIM on the ME's display, with an indication of priority (normal or high), and a defined action (user activity or timeout) to terminate the text display
2. display a text string and obtain the response in the form of a single user keystroke or a string of keys entered by the user and pass the response to the SIM. If the response is designated as private by the SIM the ME shall not display the users response on the screen
3. ~~—~~set up a voice call to an address~~ number~~ with a specific priority as indicated by the SIM, all parameters are indicated by the SIM
4. ~~;~~set up a data call to an address~~a number~~ with specific bearer capability and priority, all parameters are indicated by the SIM
5. set up and manage a data channel (using a CSD, GPRS, SMS or USSD bearer) between the SIM and an address using information provided by the SIM
6. send data through a previously set up data channel using (5) above. The SIM informs the ME if the data is to be sent immediately
7. retrieve data from the ME that has previously been received via a data channel set up using (5) above. The SIM informs the ME as to how much data it expects to retrieve.

~~— set up a GPRS context to an address specified by the SIM, performing the necessary network attachment if applicable~~

~~-~~8. send a short message to the network. The short message text is supplied by the SIM to the ME in either packed or unpacked SMS 7-bit alphabet, or UCS2 alphabet;

9. send an SS control, SS MMI string or USSD string, indicating which alphabet is used where applicable

~~- send and receive GPRS packets to a specified GPRS context using the GPRS bearer service~~

10. play a tone in the appropriate audio device
11. negotiate, within reasonable tolerances, a periodic "polling" of the SIM Toolkit
12. refresh the image (if applicable) of the SIM data contained in the ME memory, either entirely, or partially, or instruct the ME to re-initialise completely
13. set up an event list in the ME such that the SIM is informed by the ME when a SIM indicated event has occurred
14. set up an additional menu in the ME, by issuing the ME with a menu list, and allow indication back to the SIM of the user selected menu item
15. provide requested information from the ME to the SIM, for example the MCC, MNC and IMEI
16. communicate bi-directionally with an auxiliary device, e.g. a second card reader
17. set up, refresh and interrogate several timers, and inform the SIM when these expire, within reasonable tolerances
18. display additional MMI information such as display information or tones with commands that employ network resources, with an indication to the ME as to the required level of ME generated MMI as a result of the interaction with the network
19. allow the ME to display help information with the commands, by providing the associated text, related to the user action (e.g. menu selection).

Unless otherwise stated the following shall apply:

- The format of text to be displayed is designated by the SIM and is either SMS default alphabet (packed or unpacked) or UCS2 alphabet
- The format of the response from the ME is designated by the SIM and is either keypad digit (0-9, *, #, +), SMS default alphabet characters or UCS2 alphabet characters.

Editor's Note: Release 99 shall also include a technical specification produced in a technical working group (the exact group is to be decided) to describe the technical detail of how these requirements are to be fulfilled by the ME. This technical specification is to be introduced in TSGs#8 in June 1999 at which point this note can be removed. A reference to this specification shall be provided in the references section above. Additional requirements from the Applications and Automatic Execution Environment Workshop should be considered for inclusion in Release 99 of this specification.

6.3 ME Capability for support of bearer independent protocol

The ME supporting bearer independent protocol shall provide to the SIM a common interface for any type of data bearer. This interface is in addition to dedicated commands (eg SMS, SS and USSD) for SAT application to exchange data with the network.
~~This support requires the ME to manage buffers and the links to PLMN according to SIM request.~~

~~6.3.1 Buffer management~~

~~The ME shall maintain buffers to insure that the data transferred is not lost in either direction between the SIM and the GSM PLMN. Buffer size and number of buffers is up to the ME and may vary depending on the bearers used.~~
~~The minimum size of each of the sending and receiving buffer shall be 255 bytes.~~

~~6.3.2 Link management~~

The communication is initiated by the SIM. The ME negotiates with the SIM and the network to establish the optimum channel considering the SIM request, the network and ME capabilities.
The ME is responsible for maintaining and restoring the link should there be a link error.
~~Timeouts, supplied by the SIM, will be used by the ME to make optimal use of the network.~~

…

8.1 SAT SIM/Network interaction

SAT/Network interaction is required such that the SAT and the network can bi-directionally exchange data ~~transparently~~ through the ME, ~~using the "over the air protocol"~~ employing any of the transport mechanisms defined in the section "SAT bearer requirements".

...

9 SAT bearer requirements

~~SAT shall support the transmission (mobile originated) and the reception (mobile terminated) of data by means of:~~
~~- SMS~~
~~- USSD~~
~~- Cell Broadcast (mobile originated excluded)~~
~~- SMS via GPRS~~
~~- GPRS~~
~~GSM circuit switched data~~

9.1 Bearers supported

SAT shall support the transmission (mobile originated) and the reception (mobile terminated) of data by means of one of

the following bearers, either using dedicated commands or managed by the ME (using the Bearer independent protocol) :

BEARER	**Dedicated commands**	**Bearer independent protocol**
SMS	Yes	Yes
CSD	No	Yes
GPRS	No	Yes
USSD	Yes (MO only)	Yes
Cell Broadcast (mobile originated excluded)	Yes	No
SMS via GPRS	Yes	Yes

9.2Bearer requirements for ME using the bearer independent protocol

9.2.1 Bearer parameters requirements

While opening a channel the SIM and the ME will exchange and negotiate parameters in order to establish a communication with the GSM PLMN.

For all the data bearer, the SIM provides the ME the following parameters :

- Destination address

Quality of service parameters :

- Timers to indicate the lifetime of the channels

- Minimum Size of buffer requested

- all other bearer specific parameters

The ME returns the following parameters to the SIM:

- Channel address (Identifier)

- Allocated Buffers size

Channel parameters

9.2.2 CSD Specific requirements

To establish a CSD communication the ME shall support the followings requirements

- Manage data flow control over the link

- Provide the SIM with ME's CSD capability, at power on and/or later.

9.2.3 GPRS Specific requirements

To establish a GPRS communication the ME shall support the followings requirements

- Manage data flow control over the link

- Provide the SIM with ME's GPRS capability at power on and/or later.

The support of anonymous GPRS and GPRS SMS is left for further study

9.2.3 SMS Specific requirements

To establish a SMS communication the ME shall support the followings requirements

- Manage data flow control over the link
- Perform any packing/unpacking required on the data, without compromising the data and the data validity period

9.2.4 USSD Specific requirements

To establish a USSD communication the ME shall support the followings requirements

- Manage data flow control over the link
- Perform any packing/unpacking required on the data, without compromising the data and the data validity period