Source: **ETSI STC SMG1**

Title: **GSM data streamlining**

Document for: **Decision**

Attention: **Agenda item 5**

CN is invited to endorse these CRs to be passed to SMG#29 for approval.

CHANGE REQUEST No :   *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: 02.01   Version   6.0.0

Submitted to SMG
list plenary meeting or STC here ↑

for approval
for information

without presentation ("non-strategic")
with presentation ("strategic")

PT SMG CR cover form. Filename: crf26_3.doc

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

Work item:

Source: Nokia   **Date:**   3.3.1999

Subject: GSM data streamlining

Category:

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

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

Reason for change: Current data services have been criticised as over engineered and complex. In order to simplify things, individual BSs are deleted. Also some not utilised interworking scenarios are deleted.

Clauses affected: 6

Other specs affected:

Other releases of same spec		→ List of CRs:
Other core specifications	X	→ List of CRs: 02.02, 02.03,02.04
MS test specifications / TBRs		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

6   Provision of telecommunication services

A telecommunication service is provided at different access points by a network operator (e.g. an Administration, RPOA) and/or other service providers. Specifications GSM 02.10 and 02.11 define some aspects of the provisions of telecommunication services by a GSM PLMN.

The provision of telecommunication services implies:

-        subscription of basic services and possibly subscription to supplementary services;

-        registration into a service directory;

-        compatibility between terminals;

-        interworking capabilities (see GSM 09 series of specifications).

The user's subscription to a Basic or Supplementary service is normally verified by the network prior to completion of Call Establishment and/or Supplementary Service operation. This subscription checking shall be performed in accordance with the following sections.

6.1   Subscription checking for Basic Services

General

Subscription checking is the function/process to ascertaining whether a subscriber has the authorization to use the particular Basic Service deduced from the call set-up parameters. It is the responsibility of the HPLMN to transfer, to the VPLMN, only the subscription data corresponding to those services a given subscriber is entitled to use in that VPLMN.

For mobile originated calls, subscription checking is performed in the VLR, whilst for mobile terminated calls it is performed in either the HLR or the VLR (determined as described below). The prerequisite for executing the subscription check is a successful deduction of a Basic Service from the Compatibility Information contained in the call set up, i.e. Bearer Capability Information Element and, in some cases, also the Low Layer and High Layer Compatibility Information elements.

For mobile originated calls an MS shall indicate the requested service by appropriate compatibility information elements according to GSM 07.01. This information is mapped to an individual Basic Service code (i.e. the MAP representation) by the MSC in order to be compared with the subscriber data available in the VLR.

An equivalent process is required in the HLR for mobile terminated calls, where the caller's requested service is indicated to the HLR (by the ISDN) by exhaustive compatibility information consisting of ISDN Bearer Capability Information Elements and in some cases - depending on the service requested - also of Low Layer and High layer Compatibility information elements. In case the compatibility information is not exhaustive, e.g. when the call is originated/transited by a PSTN, no GSM Basic Service can be deduced and subscription checking cannot be performed in the "normal" way. Instead, rules for the Single and Multi Numbering Schemes apply.

In the Multi Numbering Scheme the Basic Service can be deduced by information stored in the HLR against the called number and hence an implicit subscription check is performed. In the Single Numbering Scheme, the Basic Service cannot be deduced until the MS has responded to the set up and therefore the HLR cannot perform subscription check. Instead, the VLR/MSC will perform the subscription check or calls are passed "unfiltered" (as regards subscription check), at the network operators' discretion.

Bearer Services

GSM 02.02 lists the Bearer Services, each of them with a specific "BS number" ~~constituting either a single or a dual (Alternate... or Followed by...) service~~. Single services defined independent of the fixed network user rate are called General Bearer Services. These distinct [numbered] services may individually be provided to a subscriber~~, e.g. an operator may offer a subscription called "Synchronous Data 1200 bps" and another subscription "Synchronous Data 2400 bps". Operators may also, or instead, offer their subscribers a subscription to groups and/or combinations of the Bearer Services as packages, e.g. "All Synchronous Data services". A subscription to a General Bearer Service comprises the subscription to all individual single services of its group, e.g. "Asynchronous General Bearer Service" is equivalent to "All Asynchronous Data Services". A subscriber shall not have a simultaneous subscription to a General Bearer Service and any of the individual single services covered by this General Bearer Service.~~

Whichever the subscription arrangements are, all PLMNs (MSCs, VLRs and HLRs) shall be able to allow - as regards subscription checking - the use of individually subscribed-to Basic Services, within the range of services supported by the PLMN. That is, whenever it is possible to deduce the Basic Service from a call set up, subscription check shall be performed at the granularity of that particular Basic Service or the group to which it belongs~~. This is obvious for "single" services, but "dual" services require attention due to its virtual compostion of two single services. I.e. a subscription to an Alternate Service (e.g. Speech and data) does not on its own entitle the use of the Telephony service, however a speech call may be set up, but by use of - or rather as a part of - the Alternate Service.~~

~~In case a PLMN supports the "Alternate" and/or "Followed by" functionality but does not support all the data services comprised in those services, it shall still offer the "Alternate" and/or "Followed by" services in its reduced for, i.e. for those data rates it supports.~~

~~**Explanatory examples:**~~

~~An operator offers individual services only, hence transfers to the VLR (for a roaming subscriber) subscriber data consisting of a number of single basic service codes, e.g. the MAP representation of Bearer Services 21, 22 and 61. This entitles the use (subject to support in the VPLMN) of Asynchronous bearer services with 300 and 1200 bps, and the use of "Alternate Speech/Data Asynch/Synch with 300-9600 bps", but not the use of a single (i.e. non-dual) synch/asynch service with e.g. 9600 bps (though it may be used in "Alternate mode").~~

~~An operator offers combinations (or groups) of single Bearer Services e.g. the group All single Asynchronous services (BS 2x). The subscription entitles the usage of any of the Bearer Services comprised in the group, but not the use of an "Alternate" or "Followed by" service.~~

TeleServices

GSM 02.03 lists the TeleServices, each of them with a specific "TS number". These may be provided to subscribers individually or combined, to the operators' discretion, however TS 12 (E-calls) and 23 (CB) are not subscribable. But, as for Bearer Services, networks shall be able to handle subscription checking at the granularity of individual TeleServices.

Table 2 summarizes the basis on which a successful subscription checking will result. It also describes on which basis Supplementary Service handling for a given call set-up should be performed.

Table 2

Set Up	Subscription Check	SS handling
BS 20	BS 20	BS Group 2x
~~BS 21~~	~~BS 21, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
~~BS 22~~	~~BS 22, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
~~BS 23~~	~~BS 23, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
~~BS 24~~	~~BS 24, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
~~BS 25~~	~~BS 25, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
~~BS 26~~	~~BS 26, BS20, BS Group 2x or BS Group All~~	~~BS Group 2x~~
BS 30	BS 30	BS Group 3x
~~BS 31~~	~~BS 31, BS30, BS Group 3x or BS Group All~~	~~BS Group 3x~~
~~BS 32~~	~~BS 32, BS30, BS Group 3x or BS Group All~~	~~BS Group 3x~~
~~BS 33~~	~~BS 33, BS30, BS Group 3x or BS Group All~~	~~BS Group 3x~~
~~BS 34~~	~~BS 34, BS30, BS Group 3x or BS Group All~~	~~BS Group 3x~~
~~BS 40~~	~~BS 40~~	~~BS Group 4x~~
~~BS 41~~	~~BS 41, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 42~~	~~BS 42, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 43~~	~~BS 43, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 44~~	~~BS 44, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 45~~	~~BS 45, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 46~~	~~BS 46, BS 40, BS Group 4x or BS Group All~~	~~BS Group 4x~~
~~BS 50~~	~~BS 50~~	~~BS Group 5x~~
~~BS 51~~	~~BS 51, BS 50, BS Group 5x or BS Group All~~	~~BS Group 5x~~
~~BS 52~~	~~BS 52, BS 50, BS Group 5x or BS Group All~~	~~BS Group 5x~~
~~BS 53~~	~~BS 53, BS 50, BS Group 5x or BS Group All~~	~~BS Group 5x~~
~~BS 61~~	~~BS 61, BS Group 6x or BS Group All~~	~~BS Group 2x or BS Group 3x~~
BS 70	BS 70	N.A.
~~BS 81~~	~~BS 81, BS Group 8x or BS Group All~~	~~BS Group 2x or BS Group 3x~~
TS 11	TS 11, TS Group 1x or TS Group All	TS Group 1x
TS 12	N.A.	
TS 21	TS 21, TS Group 2x or TS Group All	TS Group 2x
TS 22	TS 22, TS Group 2x or TS Group All	TS Group 2x
TS 23	N.A.	
TS 61	TS 61, TS Group 6x or TS Group All	TS Group 6x
TS 62	TS 61, 62, Group 6x or TS Group All	TS Group 6x
TS 91	TS 91, TS Group 9x or TS Group All	TS Group 9x
TS 92	TS 92, TS Group 9x or TS Group All	TS Group 9x

Legend:

Set up: The Basic Service which is set up for the call.

Subscription check: Required VLR or HLR data for successful subscription check.

SS handling: Against which VLR or HLR data SS handling should be performed. For example; a call set-up indicating BS61 and Asynchronous mode should be treated for SS purposes in accordance with the SS-data stored against BS group 2x.

Example: A Call set up for BS 30~~81~~ ~~Synchronous~~ should be permitted if the subscription data in the VLR/HLR says "BS30~~81~~", "BS Group 3~~8~~x" or "All BS". Furthermore, it should be handled for SS purposes in accordance with those SS which are Active (and Operative) for BS Group 3x.

When TS61 is requested in a call set-up and the subscription check for TS61 is negative, but a subscription check for TS62 is positive, then the call shall proceed according to the GSM 02.03 and GSM 07.01. If a subscription check for both TS61 and TS62 is negative, then the call shall be released.