Technical Specification Group Services and System Aspects
Meeting #10, Bangkok, Thailand, 11-14 December 2000

TSGS#9(00) 0539

Source: **TSG SA1**

Title: **CR to 22.101 on Subscription Check (R4)**

Document for: **Approval**

Agenda Item: **7.1.3**

Spec	CR	Rev	Phase	Cat	Subject	Vers	New Vers	SA1 Doc. No.
22.001	005		R4	B	Subscription Check	4.0.0	4.1.0	S1-000772

CR-Form-v3

CHANGE REQUEST

✍ **TS 22.001 CR 005** ✍ rev **-** ✍ Current version: **4.0.0** ✍

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ✍ symbols.*

Proposed change affects: ✍ (U)SIM ☐   ME/UE **X**   Radio Access Network ☐   Core Network **X**

Title: ✍	Subscription Check
Source: ✍	SA1
Work item code: ✍ BMWPN	***Date:*** ✍ 17/11/2000
Category: ✍ **B**	***Release:*** ✍ REL-4

Use <u>one</u> of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use <u>one</u> of the following releases:
2   *(GSM Phase 2)*
R96   *(Release 1996)*
R97   *(Release 1997)*
R98   *(Release 1998)*
R99   *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ✍	CN3 requests to clarify the subscription checking. (N3-000542)
Summary of change: ✍	Subscription checking should be performed when service modification is performed.
Consequences if not approved: ✍	

Clauses affected: ✍	4.1
Other specs affected: ✍	☐ Other core specifications ✍ ☐ Test specifications ☐ O&M Specifications
Other comments: ✍	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ✍ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.1   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 or service modification 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 or service modification, 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 UE shall indicate the requested service by appropriate compatibility information elements according to GSM 27.001 [8]. 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 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 UE 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.

~~For mobile originated/terminated calls~~, ~~the~~ The subscription checking shall be performed when service modification is performed. ~~if re-negotiation of bearer/QoS is necessary during CS calls or PS sessions. And it shall be possible to perform before re-negotiating~~. If the subscriber checking is negative, it shall be able to return to current TS or BS. ~~previous bearer/QoS attributes.~~

Bearer Services

GSM 02.02 lists the Bearer Services, each of them with a specific "BS number". 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.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 or service modification, subscription check shall be performed at the granularity of that particular Basic Service or the group to which it belongs.

TeleServices

TS 22.003 [6] 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 (Emergency calls) and TS 23 (CBS) 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 30	BS 30	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.		

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 TS 22.003 [6]and TS 27.001 [8]. If a subscription check for both TS61 and TS62 is negative, then the call shall be released. When TS61 is requested in service modification and the subscription check for TS61 is negative, but a subscription check for TS62 is positive, then the call shall proceed according to the TS 22.003 [6]and TS 27.001 [8]. If a subscription check for both TS61 and TS62 is negative, then the call mode shall not be modified.