

3GPP TSG CN Plenary Meeting #27
9th – 11th March 2005 Tokyo, JAPAN.

NP-050054

Source: TSG CN WG4
Title: Corrections on MAP
Agenda item: 9.21
Document for: APPROVAL

Doc-2nd-Level	Spec	CR	Rev	Phase	Subject	Cat	Ver_C
N4-050369	29.002	761	1	Rel-6	Addition of LAI to SendIdentification Request	F	6.8.0

Sydney, Australia. 14th to 18th February 2005.

CR-Form-v7.1

CHANGE REQUEST

⌘ **29.002 CR 761** ⌘ rev **1** ⌘ Current version: **6.8.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Addition of LAI to SendIdentification Request		
Source:	⌘ CN4		
Work item code:	⌘ TEI6	Date:	⌘ 16/02/2005
Category:	⌘ F	Release:	⌘ Rel-6
	<p><i>Use one of the following categories:</i></p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p><i>Use one of the following releases:</i></p> <p>Ph2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) Rel-7 (Release 7)</p>

Reason for change:	<p>⌘ According to 24.008 chapter 4.3.1 the TMSI has significance only within a location area. Outside the location area it has to be combined with the Location Area Identifier (LAI) to provide for an unambiguous identity.</p> <p>However, the MAP SendIdentification message which is sent from the new VLR to the previous VLR in order to request the subscriber's IMSI (and unused authentication vectors) does contain only TMSI but no LAI. As a consequence either</p> <p>a) the TMSI has to be allocated with significance and uniqueness within the complete VLR-area, or</p> <p>b) the PVLR cannot unambiguously identify the concerned subscriber when receiving SendIdentification.</p>
Summary of change:	⌘ Add the LAI to MAP SendIdentificationArg
Consequences if not approved:	⌘ While the alternative a) imposes a restriction in the amount of subscribers that can be served by a VLR (see calculations in 23.236 annex A), alternative b) results in IMSI requests to the UE and sub-optimal authentication vector consumption.

Clauses affected:	⌘ 8.1.4, 17.7.1		
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px 5px;">Y</td> <td style="padding: 2px 5px;">N</td> </tr> </table>	Y	N
Y	N		

Other specs affected:	⌘	<input checked="" type="checkbox"/>	Other core specifications	⌘	
		<input checked="" type="checkbox"/>	Test specifications		
		<input checked="" type="checkbox"/>	O&M Specifications		
Other comments:	⌘	It must be noted that for the analogon in the PS-domain (GTP Identification Request) the Routing Area Id is transmitted together with the P-TMSI to the previous SGSN (see 29.060 chapter7.5.1).			

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.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://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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.

8.1.4 MAP_SEND_IDENTIFICATION service

8.1.4.1 Definition

The MAP_SEND_IDENTIFICATION service is used between a VLR and a previous VLR to retrieve IMSI and authentication data for a subscriber registering afresh in that VLR.

It may also be used to send the MSC number from a VLR to a previous VLR.

The MAP_SEND_IDENTIFICATION service is a confirmed service using the service primitives defined in table 8.1/4.

8.1.4.2 Service primitives

Table 8.1/4: MAP_SEND_IDENTIFICATION

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
TMSI	M	M(=)		
Number of requested vectors	M	M(=)		
Segmentation prohibited indicator	C	C(=)		
MSC Number	U	C(=)		
Previous Location Area Id	U	C(=)		
IMSI			C	C(=)
Authentication set			U	C(=)
Current Security Context			U	C(=)
User error			C	C(=)
Provider error				O

8.1.4.3 Parameter definitions and use

Invoke Id

See definition in clause 7.6.1.

TMSI

See definition in clause 7.6.2.

If multiple service requests are present in a dialogue then this parameter shall be present in every service request.

Number of requested vectors

A number indicating how many authentication vectors the new VLR is prepared to receive. The previous VLR shall not return more vectors than indicated by this parameter.

This parameter shall be present in the first (or only) request of the dialogue. If multiple service requests are present in a dialogue then this parameter shall not be present in any service request other than the first one

Segmentation prohibited indicator

This parameter indicates if the new VLR or SGSN allows segmentation of the response at MAP user level.

This parameter may be present only in the first request of the dialogue.

IMSI

See definition in clause 7.6.2. The IMSI is to be returned if the service succeeds.

If multiple service requests are present in a dialogue and the service succeeds then this parameter shall not be present in any service response other than the first one

MSC Number

This is the ISDN number assigned to the MSC currently serving the MS.

[Previous Location Area Id](#)

[See definition in clause 7.6.2. Together with the TMSI the Previous Location Area Id can be used to derive the IMSI.](#)

Authentication set

See definition in clause 7.6.7. If the service succeeds a list of up to five authentication sets is returned, if there are any available.

Current Security Context

See definition in clause 7.6.7. If the service succeeds, a list of either GSM or UMTS Security Context parameters can be returned.

User error

This parameter is mandatory if the service fails. The following error cause defined in clause 7.6.1 may be used, depending on the nature of the fault:

- unidentified subscriber.

Provider error

For definition of provider errors see clause 7.6.1.

*****next modification*****

17.7.1 Mobile Service data types

...

```
IMPORTS
    maxNumOfSS,
    SS-SubscriptionOption,
    SS-List,
    SS-ForBS-Code,
    Password
FROM MAP-SS-DataTypes {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SS-DataTypes (14) version9 (9)}

    SS-Code
FROM MAP-SS-Code {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SS-Code (15) version9 (9)}

    Ext-BearerServiceCode
FROM MAP-BS-Code {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-BS-Code (20) version9 (9)}

    Ext-TeleserviceCode
FROM MAP-TS-Code {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-TS-Code (19) version9 (9)}

    AddressString,
    ISDN-AddressString,
    ISDN-SubaddressString,
    FTN-AddressString,
    AccessNetworkSignalInfo,
    IMSI,
    IMEI,
    TMSI,
    HLR-List,
```

```

LMSI,
Identity,
GlobalCellId,
CellGlobalIdOrServiceAreaIdOrLAI,
Ext-BasicServiceCode,
NAEA-PreferredCI,
EMLPP-Info,
MC-SS-Info,
SubscriberIdentity,
AgeOfLocationInformation,
LCSCClientExternalID,
LCSCClientInternalID,
Ext-SS-Status,
LCSServiceTypeID,
ASCI-CallReference,
TBCD-STRING,
LAIFixedLength
FROM MAP-CommonDataTypes {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-CommonDataTypes (18) version9 (9)}

    ExtensionContainer
FROM MAP-ExtensionDataTypes {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version9 (9)}

    AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
    itu-t identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-ER-DataTypes (17) version9 (9)}
;

```

...

SendIdentificationArg ::= SEQUENCE {			
tmsi	TMSI,		
numberOfRequestedVectors	NumberOfRequestedVectors	OPTIONAL,	
<i>-- within a dialogue numberOfRequestedVectors shall be present in</i>			
<i>-- the first service request and shall not be present in subsequent service</i>			
<i>requests.</i>			
<i>-- If received in a subsequent service request it shall be discarded.</i>			
segmentationProhibited	NULL	OPTIONAL,	
extensionContainer	ExtensionContainer	OPTIONAL,	
...			
msc-Number	ISDN-AddressString	OPTIONAL,	
previous-LAI	[0] LAIFixedLength	OPTIONAL	}

...