3GPP TSG CN Plenary Meeting #15
6th – 8th March 2002. Jeju, Korea.

NP-020065

Source:	TSG CN WG4
Title:	CRs on Rel-5 Intra Domain Connection of RAN Nodes to multiple CN
Agenda item:	9.10
Document for:	APPROVAL

Introduction:

This document contains a CR on Rel-5 Work Item "IuFLEX", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #15 for approval.

Spec	CR	Re	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.012	008	1	N4-020188	Rel-5	Relaying of SendIdentification when IuFlex is applied	C	4.0.0

CR-Form-v5

CHANGE REQUEST

| ⌘ | **23.012** CR **008** | ⌘ **rev** | **1** | ⌘ | 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 ☐ Radio Access Network ☐ Core Network **X**

Title: ⌘	Relaying of SendIdentification when IuFlex is applied	
Source: ⌘	CN4	
Work item code: ⌘	IUFLEX	***Date:*** ⌘ 14-01-2002
Category: ⌘ **C**		***Release:*** ⌘ REL-5

Use *one* of the following categories:
F (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 *one* 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: ⌘	If the MSC/VLR applies "Intra Domain Connection of RAN Nodes to Multiple CN Nodes" then when receiving a Send Identification operation, it has to verify whether the operation is meant for itself or for another VLR serving the Pool area, i.e. it has to select the correct VLR where the involved user is registered. This is done by checking the NRI included in the received TMSI. The VLR has then to relay (if necessary) the received operation to the correct VLR.
Summary of change: ⌘	Describe the relay function to be performed if the MSC/VLR applies "Intra Domain Connection of RAN Nodes to Multiple CN Nodes"
Consequences if not approved: ⌘	The relay functionality of the "default" node described in stage 2 TS 23.236 would not be implemented at protocol level.

Clauses affected: ⌘	1.1, 4.1.2.7, 4.1.2.9

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://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.

<div style="text-align:center">******   FIRST MODIFIED SECTION   ******</div>

1.1   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]   3GPP TR 21.905: "3G Vocabulary".

[2]   3GPP TS 23.002: "Network architecture".

[3]   3GPP TS 23.003: "Numbering, addressing and identification".

[4]   3GPP TS 23.007: "Restoration procedures".

[5]   3GPP TS 23.008: "Organization of subscriber data".

[6]   3GPP TS 23.022: "Functions related to Mobile Station (MS) in idle mode".

[7]   3GPP TS 23.116: "Super-Charger Technical Realisation; Stage 2".

[8]   3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[9]   3GPP TS 29.007: "General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)".

[10]   GSM 03.20: "Digital cellular telecommunication system (Phase 2+); Security related network functions".

[11]   3GPP TS 23.078: "CAMEL phase3 – stage2 "

[12]   3GPP TS 23.236: "Intra Domain Connection of RAN Nodes to Multiple CN Nodes"

<div style="border:1px solid;">

**** NEXT MODIFIED SECTION ****

</div>

4.1.2.7 Process Send_Identification_PVLR

Sheet 1: Decision "IuFlex applied?" distinguishes whether or not the PVLR applies "Intra Domain Connection of RAN Nodes to Multiple CN Nodes" as described in 3GPP TS 23.236. If this feature is applied, the VLR shall extract the NRI from the TMSI and attempt to derive the VLR address of the VLR where the subscriber was previously registered, denoted in the following as the "real PVLR".

Sheet 1: Decision "Result = success?" distinguishes whether the NRI could be successfully converted into the "real PVLR" address. In case of successful conversion, the PVLR shall relay the received Send_Identification message to the "real PVLR" as specified in 3GPP TS 23.236. The new VLR and the "real PVLR" shall not perceive that relaying is being performed, i.e. they shall not notice the presence of the relaying node. The actual mechanism used to perform the relay is an implementation choice. A possible mechanism is described in section 4.1.2.9.

Process Send_Identification_PVLR   SI_PVLR1(1)

Handling of the Send
in the Previous VLR (PVLR)

Signals to/from the
are to/from the new

Idle

Send
Identification

Check
Parameters

Result=
Pass? —— No

Yes

TMSI Known? —— No

Yes

Set IMSI

Set negative
unidentified subscriber

Authentication
sets available? —— No

Yes

Set Authentication
Info

Send
Identification
negative
response

Send Current
SecurityContext —— No

Yes

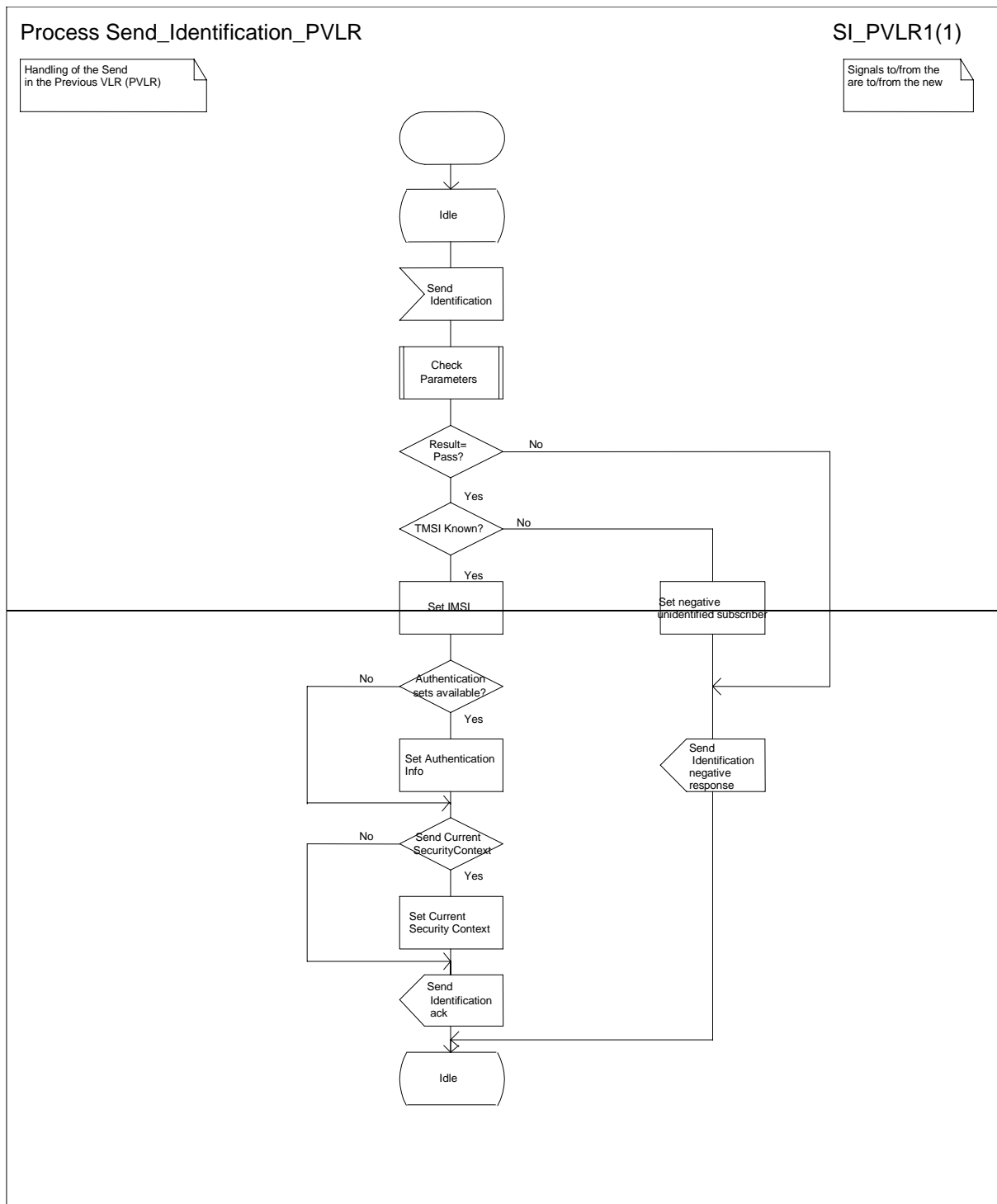Set Current
Security Context

Send
Identification
ack

Idle

~~**Figure 4.1.2.7 (sheet 1 of 1): Process Send_Identification_PVLR**~~
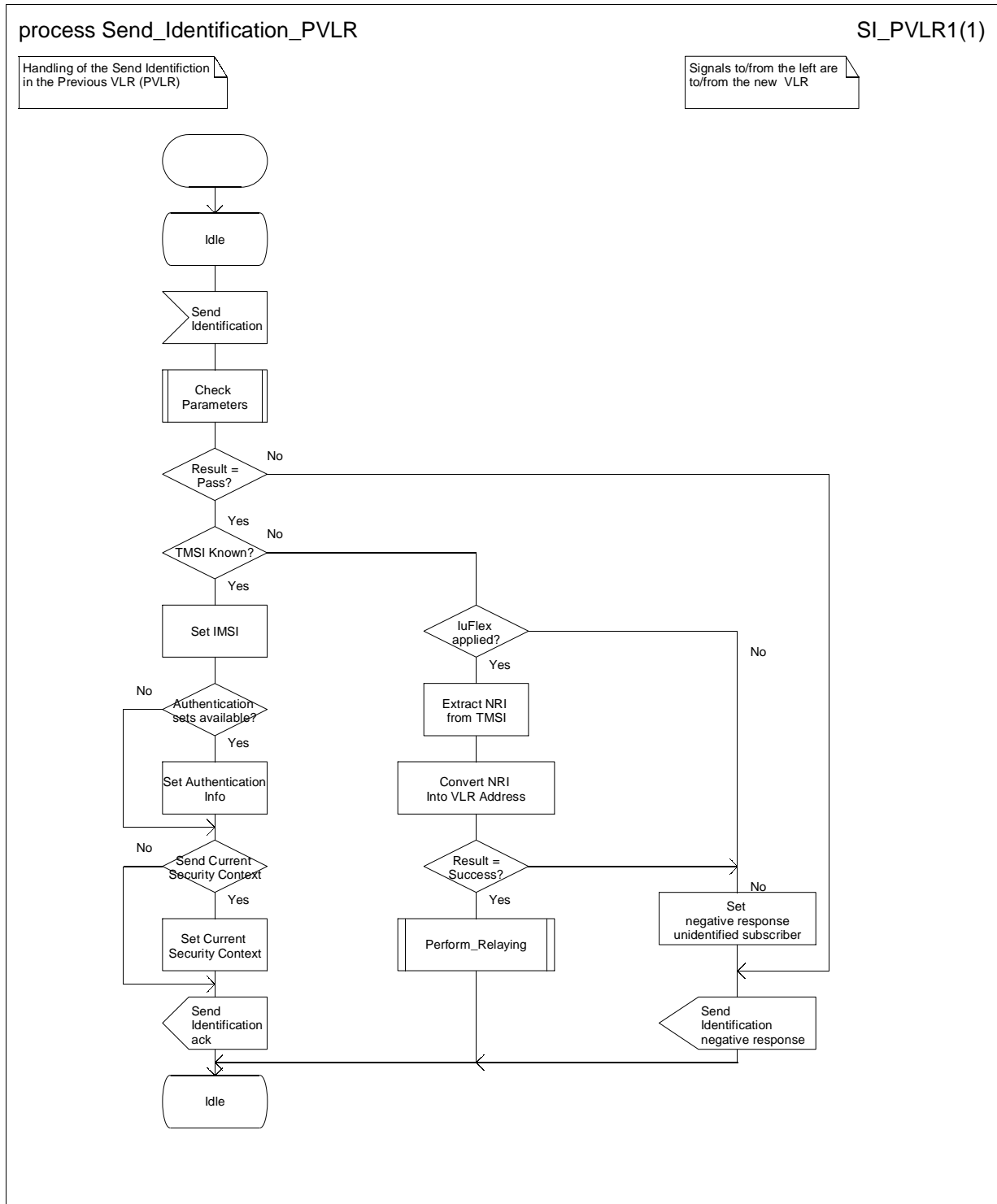
Figure 4.1.2.7 (sheet 1 of 1): Process Send_Identification_PVLR

****   NEW SECTION   ****

4.1.2.9 Procedure Perform Relaying

The relay may be performed by opening a new MAP dialogue to the "real PVLR" and keeping it linked to the existing MAP dialogue between the new VLR and the PVLR. Every message received for one of these dialogues shall be relayed to the other one, until the two dialogues are closed. This mechanism is described in figure 4.1.2.9.

In order to improve the signalling efficiency of the relaying function, alternative mechanisms may be implemented as long as no difference shall be perceived by the new VLR and the "real PVLR".
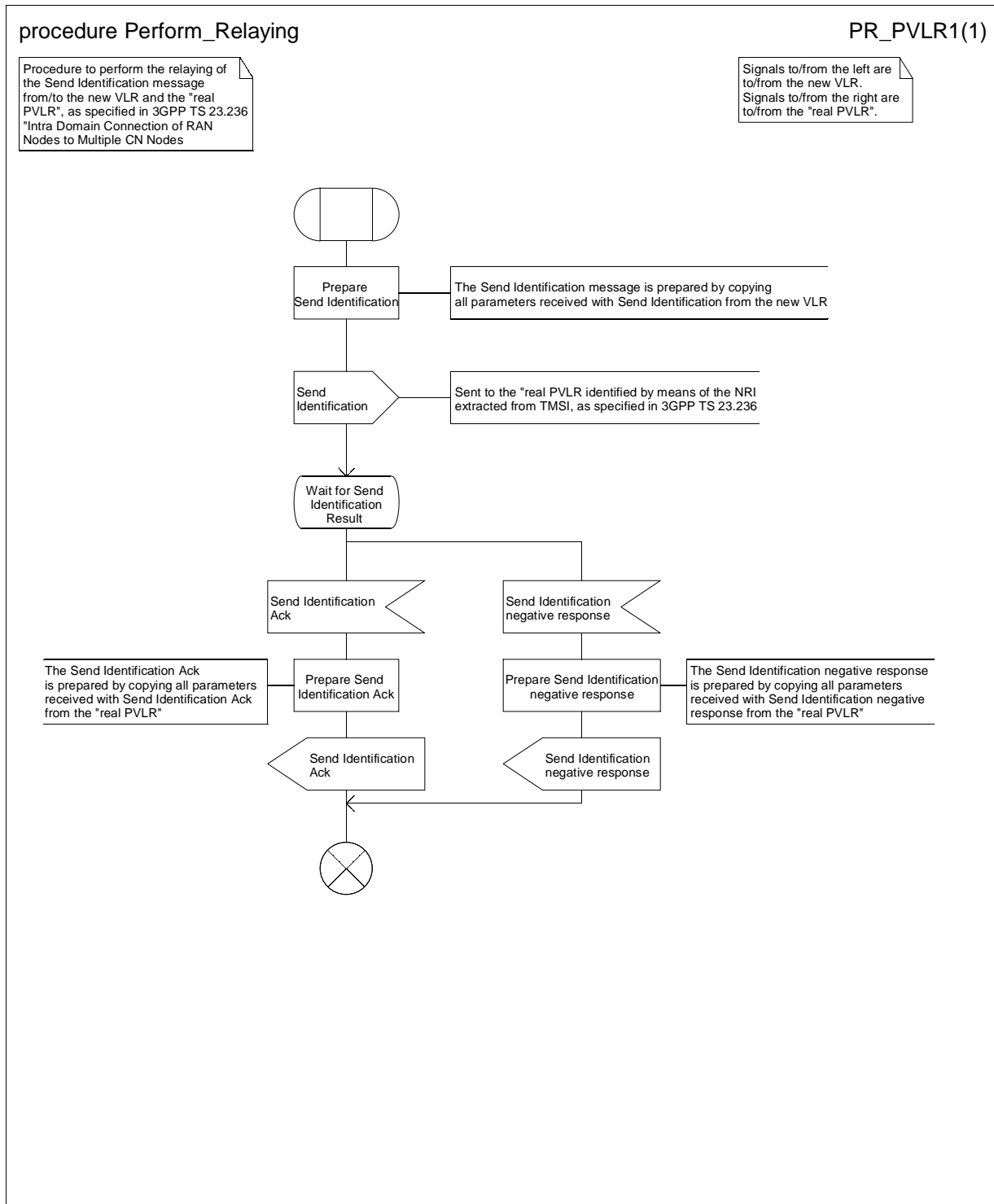
procedure Perform_Relaying   PR_PVLR1(1)

Procedure to perform the relaying of
the Send Identification message
from/to the new VLR and the "real
PVLR", as specified in 3GPP TS 23.236
"Intra Domain Connection of RAN
Nodes to Multiple CN Nodes

Signals to/from the left are
to/from the new VLR.
Signals to/from the right are
to/from the "real PVLR".

Prepare
Send Identification

The Send Identification message is prepared by copying
all parameters received with Send Identification from the new VLR

Send
Identification

Sent to the "real PVLR identified by means of the NRI
extracted from TMSI, as specified in 3GPP TS 23.236

Wait for Send
Identification
Result

Send Identification
Ack

Send Identification
negative response

The Send Identification Ack
is prepared by copying all parameters
received with Send Identification Ack
from the "real PVLR"

Prepare Send
Identification Ack

Prepare Send Identification
negative response

The Send Identification negative response
is prepared by copying all parameters
received with Send Identification negative
response from the "real PVLR"

Send Identification
Ack

Send Identification
negative response

Figure 4.1.2.9 (sheet 1 of 1): Procedure Perform Relaying

****   END OF MODIFICATIONS   ****