TSG-RAN Meeting #13
Beijing, China, 18 - 21 September 2001

RP-010555

Title: **Agreed CRs (Rel-4) to TR 25.844**

Source: **TSG-RAN WG2**

Agenda item: 8.2.4

Doc-1st-	Status-	Spec	CR	Rev	Phase	Subject	Cat	Version	Versio	Workite
R2-012163	agreed	25.844	001	2	Rel-4	SRNS relocation for seamless radio bearers	F	4.0.0	4.1.0	RANimp -RABSE

CR-Form-v4

CHANGE REQUEST

| ⌘ | **25.844** CR **001** | ⌘ | ev | **r2** | ⌘ | 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 **X** Core Network ☐

Title:	⌘	SRNS relocation for seamless radio bearers

Source:	⌘	TSG-RAN WG2

Work item code:	⌘	RANimp-RABSE	***Date:*** ⌘	18th August 01

Category:	⌘	**F**

Use <u>one</u> 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 <u>TR 21.900</u>.

Release: ⌘ REL-4

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:	⌘	As described in Tdoc R2-010896 presented during RAN WG2#20, currently, the case of a lossless SRNS relocation has been used as the baseline for describing the handling of ROHC during SRNS relocation. But it is envisaged that ROHC will be also used for lossy and seamless radio bearers and what has been defined is not applicable for lossy or seamless SRNS relocation.

Summary of change:	⌘	A new parameter in the CPDCP-CONFIG primitive between PDCP and upper layers, CPDCP-REIN-Req, is proposed to be been defined in a draft companion draft CR to 25.323 R99 and is used to reinitialise the entire context at the decompressor during SRNS relocation when Header compression is used. This is applicable for lossless, lossy and seamless radio bearers. <u>'Reconfigure' is change to 'Modification' in the CRLC-CONF-Req</u>

Consequences if not approved:	⌘	Description of ROHC handling during SRNS relocation will not be complete.

Clauses affected:	⌘	5.1.14.1

Other specs affected:	⌘	**X** Other core specifications	⌘	25.303, 25.323
		☐ 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: <u>http://www.3gpp.org/3G_Specs/CRs.htm</u>. 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.
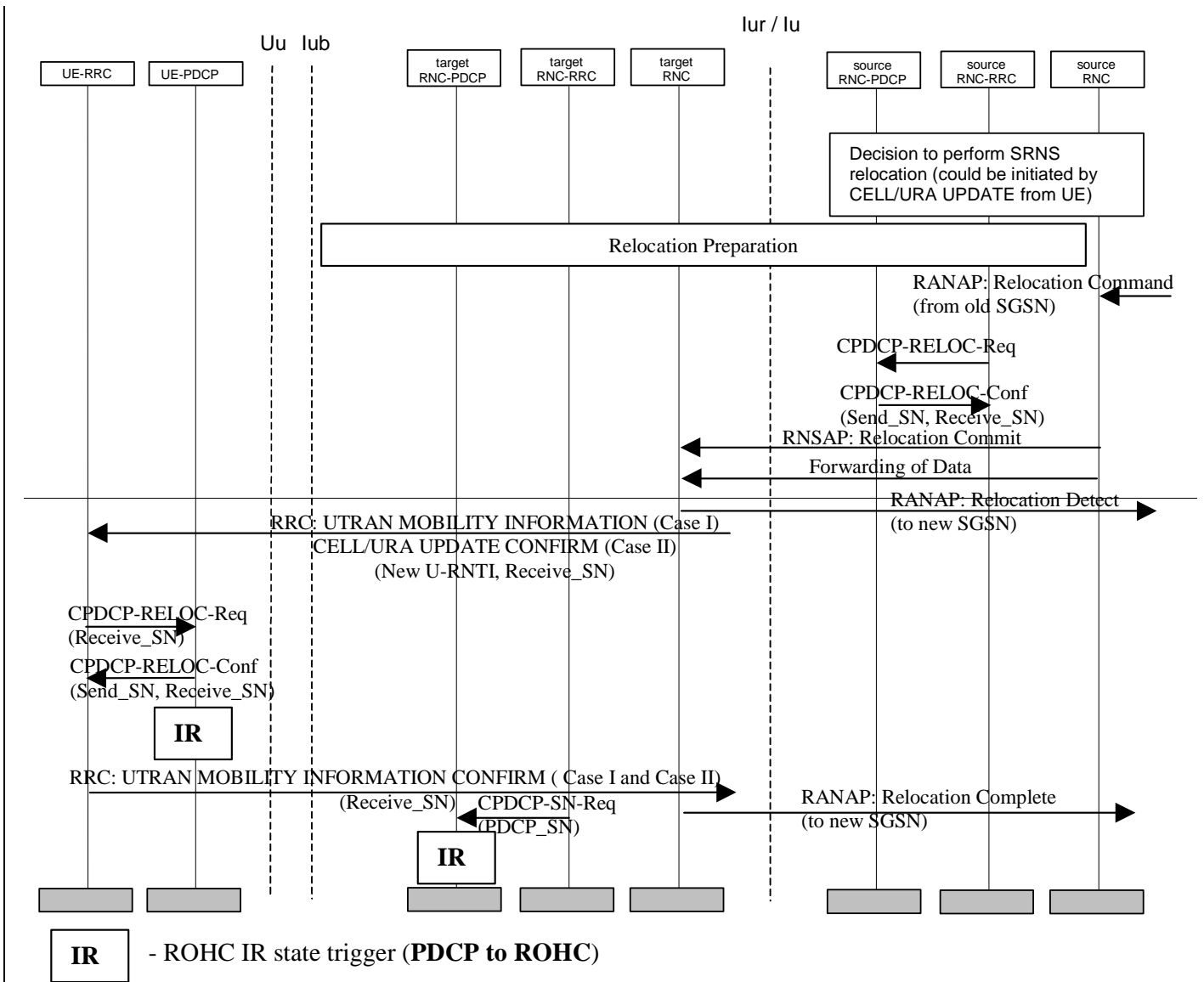
5.1.14.1   No context transfer

Immediately after relocation, the compressor in the UE and the target RNC must switch to the IR (Initialisation and Refresh state) in U-mode. The ROHC CONTEXT_REINITIALIZATION primitive as described in subclause 5.1.11.1.1 is used for this purpose.

PDCP uses the ROHC CONTEXT_REINITIALIZATION primitive after receiving the CPDCP-CONFIG-Req with the R/I parameter in the UE and the target RNC.

PDCP uses the IR state trigger:

- after sending the CPDCP-RELOC-Conf in the UE

- after receiving the CPDCP-SN-Req in the target RNC

This is shown in the figures below. Figure 11 and Figure 13 show , which is a simplified version of the combined Cell/URA update with SRNS relocation examples for a lossless and seamless radio bearer respectively as shown in [12]. Similarly, Figure 12 and Figure 14 show shows the simplified version of the Hard Handover with SRNS relocation examples for a lossless and seamless radio bearer respectively as shown in [12]. The benefit of this approach is that there is no impact on RAN WG3 specifications. However, this scheme will temporarily add overhead to the radio interface and degrade e.g. voice quality as the initialisation of contexts is being performed and so full headers are sent in form of static and dynamic parts.
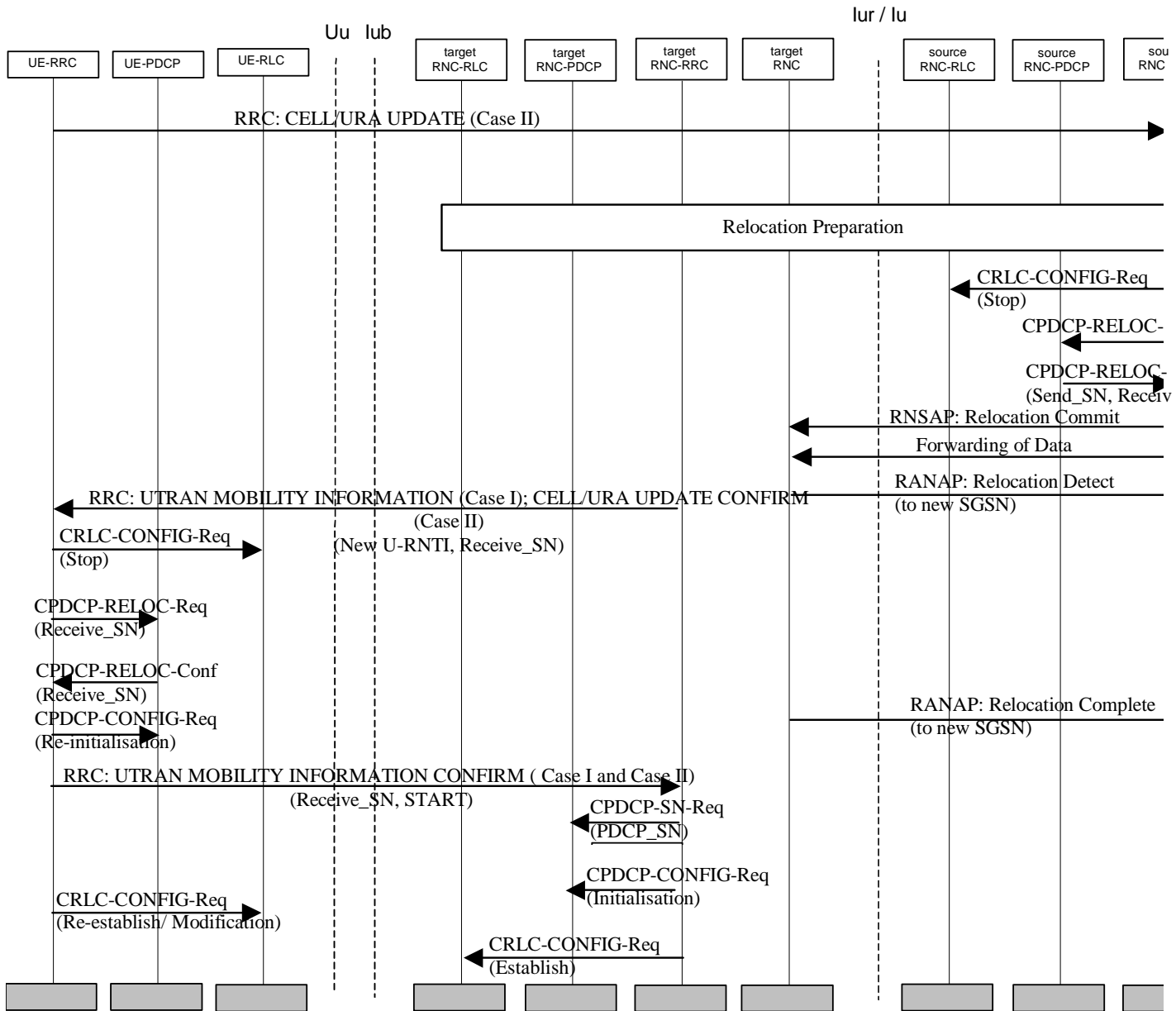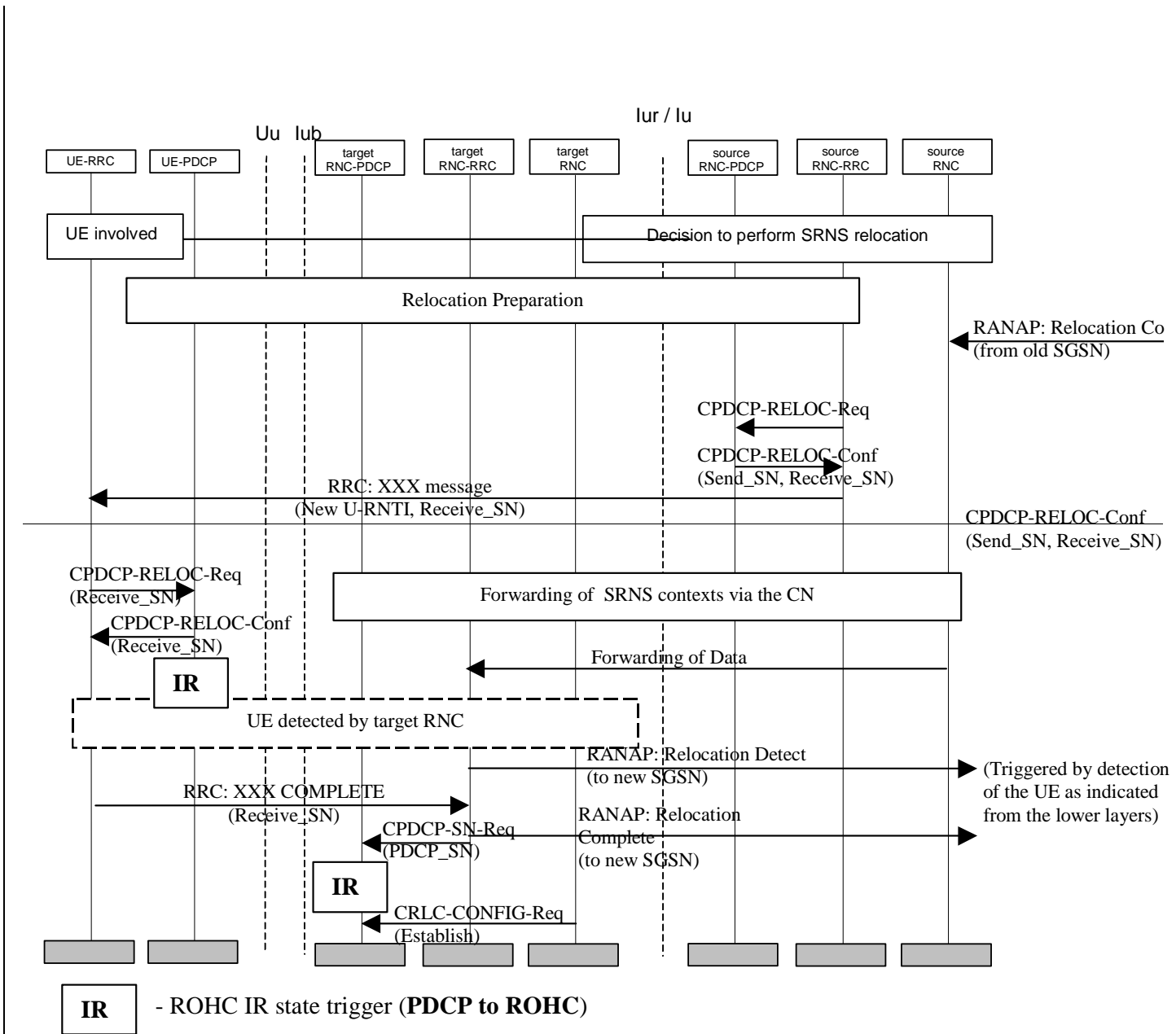
IR - ROHC IR state trigger (**PDCP to ROHC**)

Iur / Iu

| UE-RRC | UE-PDCP | UE-RLC | | Uu | Iub | | target RNC-RLC | | target RNC-PDCP | | target RNC-RRC | | target RNC | | source RNC-RLC | | source RNC-PDCP | | sou RNC |

RRC: CELL/URA UPDATE (Case II)

Relocation Preparation

CRLC-CONFIG-Req
(Stop)

CPDCP-RELOC-

CPDCP-RELOC-
(Send_SN, Receiv

RNSAP: Relocation Commit

Forwarding of Data

RANAP: Relocation Detect
(to new SGSN)

RRC: UTRAN MOBILITY INFORMATION (Case I); CELL/URA UPDATE CONFIRM
(Case II)
(New U-RNTI, Receive_SN)

CRLC-CONFIG-Req
(Stop)

CPDCP-RELOC-Req
(Receive_SN)

CPDCP-RELOC-Conf
(Receive_SN)

CPDCP-CONFIG-Req
(Re-initialisation)

RANAP: Relocation Complete
(to new SGSN)

RRC: UTRAN MOBILITY INFORMATION CONFIRM (Case I and Case II)
(Receive_SN, START)

CPDCP-SN-Req
(PDCP_SN)

CPDCP-CONFIG-Req
(Initialisation)

CRLC-CONFIG-Req
(Re-establish/ Modification)

CRLC-CONFIG-Req
(Establish)

Figure 11: ROHC handling during <u>combined Cell/URA Update and</u> SRNS relocation <u>(lossless radio bearers)</u>

Iur / Iu

Uu Iub

| UE-RRC | UE-PDCP | | target RNC-PDCP | target RNC-RRC | target RNC | | source RNC-PDCP | source RNC-RRC | source RNC |

UE involved

Decision to perform SRNS relocation

Relocation Preparation

RANAP: Relocation Co
(from old SGSN)

CPDCP-RELOC-Req

CPDCP-RELOC-Conf
(Send_SN, Receive_SN)

RRC: XXX message
(New U-RNTI, Receive_SN)

CPDCP-RELOC-Conf
(Send_SN, Receive_SN)

CPDCP-RELOC-Req
(Receive_SN)

Forwarding of SRNS contexts via the CN

CPDCP-RELOC-Conf
(Receive_SN)

Forwarding of Data

IR

UE detected by target RNC

RANAP: Relocation Detect
(to new SGSN)

(Triggered by detection
of the UE as indicated
from the lower layers)

RRC: XXX COMPLETE
(Receive_SN)

RANAP: Relocation
Complete
(to new SGSN)

CPDCP-SN-Req
(PDCP_SN)

IR

CRLC-CONFIG-Req
(Establish)

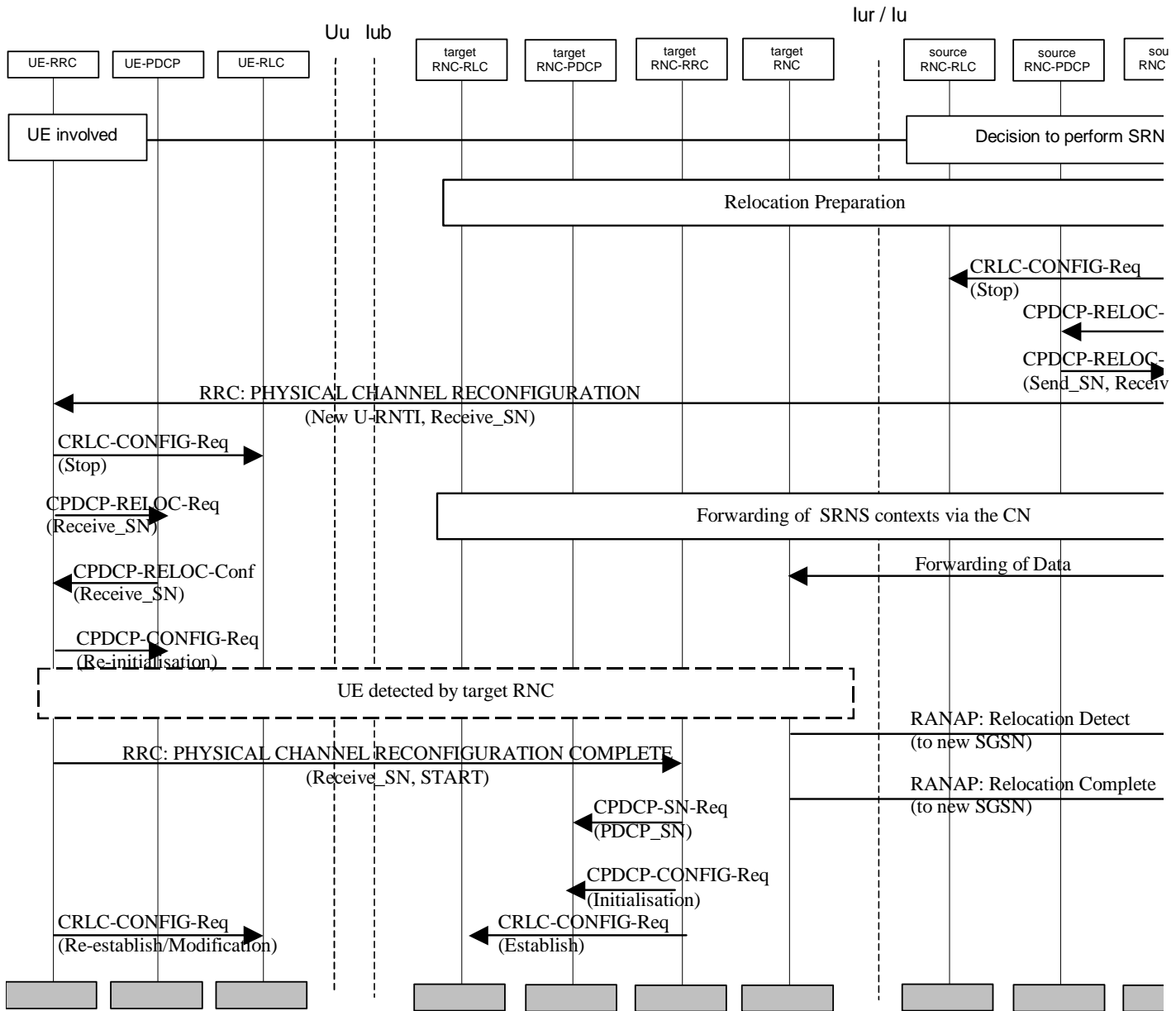**IR** - ROHC IR state trigger (**PDCP to ROHC**)

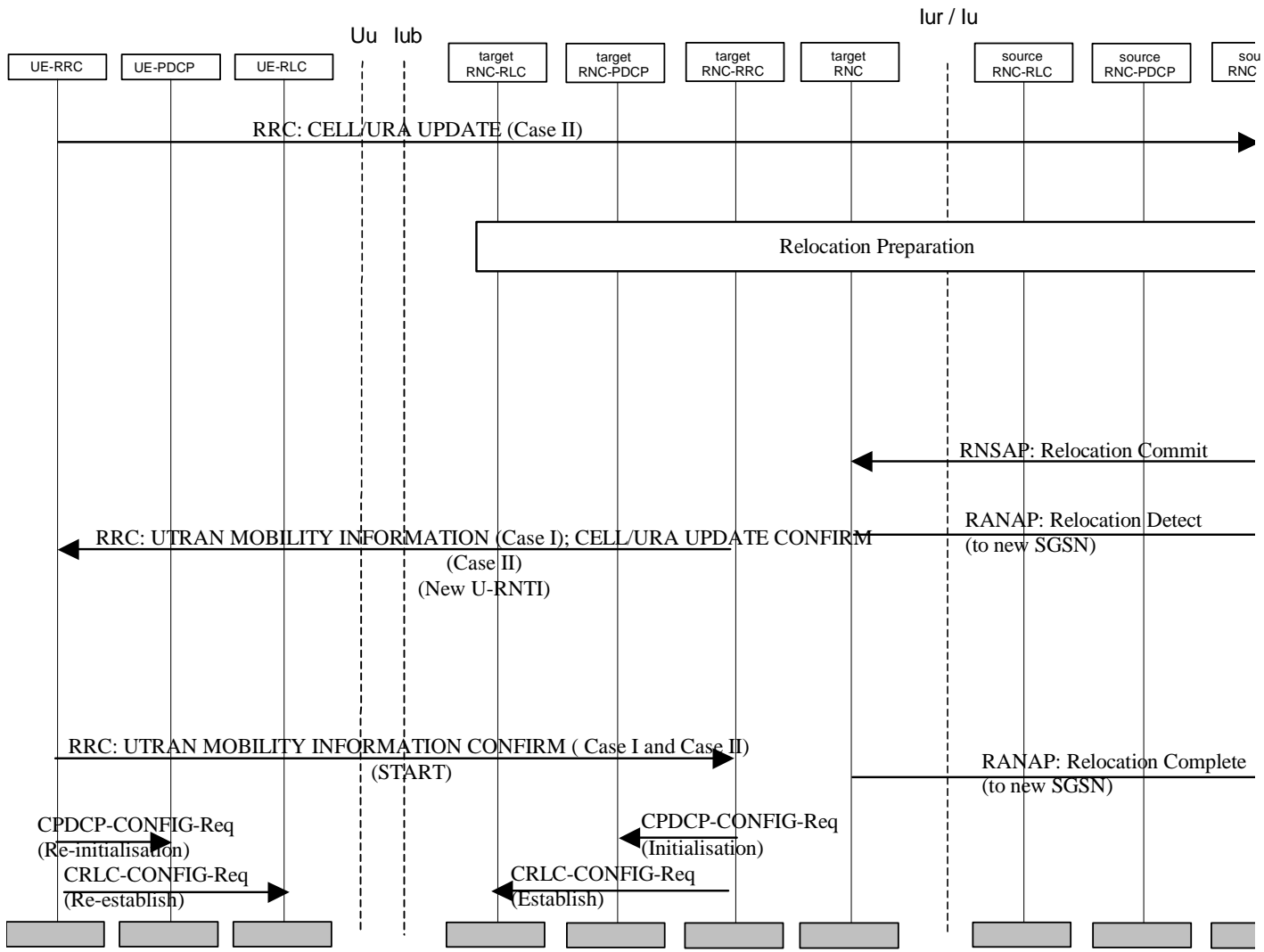**Figure 12: ROHC handling during Hard Handover with SRNS relocation (lossless radio bearers)**

Figure 13: ROHC handling during combined Cell/URA Update and SRNS relocation (seamless radio bearers)
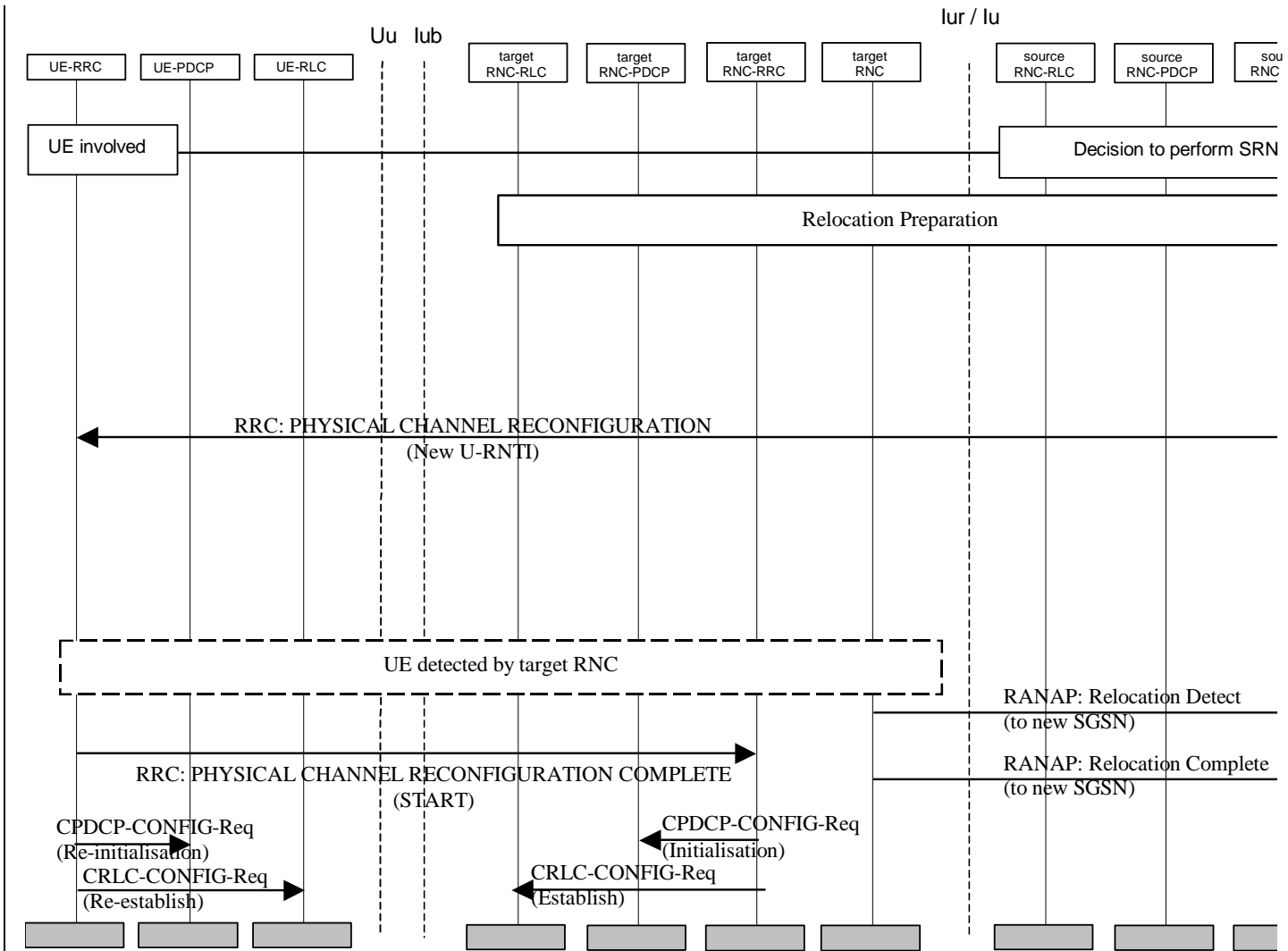
Figure 14: ROHC handling during Hard Handover with SRNS relocation (seamless radio bearers)