TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3) *TSGR2#6(99)867*
Sophia Antipolis, August 16th to 20th 1999

Agenda Item: 4.3

Source: Nokia

Title: **CR to 25.303 on RRC Connection Release Procedure**

Document for: Approval

7.1.3.1: RRC Connection Release from Dedicated Physical Channel: As the procedure now includes a L3 COMPLETE-message, the RRC CONNECTION RELEASE is proposed to be transmitted in acknowledged-mode and the FFS is proposed to be removed. Same modification is proposed to the accompanying text. In the same figure the order of CMAC Config primitives has been different from the RAB release procedure. This is now aligned.

7.1.3.2: RRC Connection Releas from Dedicated Physical Channel: A mismatch between the figure and the text is corrected and a note is moved to a new position.

3GPP TSG-RAN meeting #5 *Document* ***RP 99???***

Korea, 6-8 October 1999

3G CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

25.303 **CR** **00?** Current Version: 3.0.0

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG RAN#5 *list TSG meeting no. here ↑*

for approval [X] for information [ ] *(only one box should be marked with an X)*

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf

Proposed change affects: *(at least one should be marked with an X)* USIM [ ] ME [X] UTRAN [X] Core Network [ ]

Source: TSG-RAN WG2 **Date:** 16/08/99

Subject: RRC Connection Release Procedure

3G Work item:

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Reason for change: Proposal to remove an FFS and to correct a mismatch between text and figure.

Clauses affected: 7.1.1

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

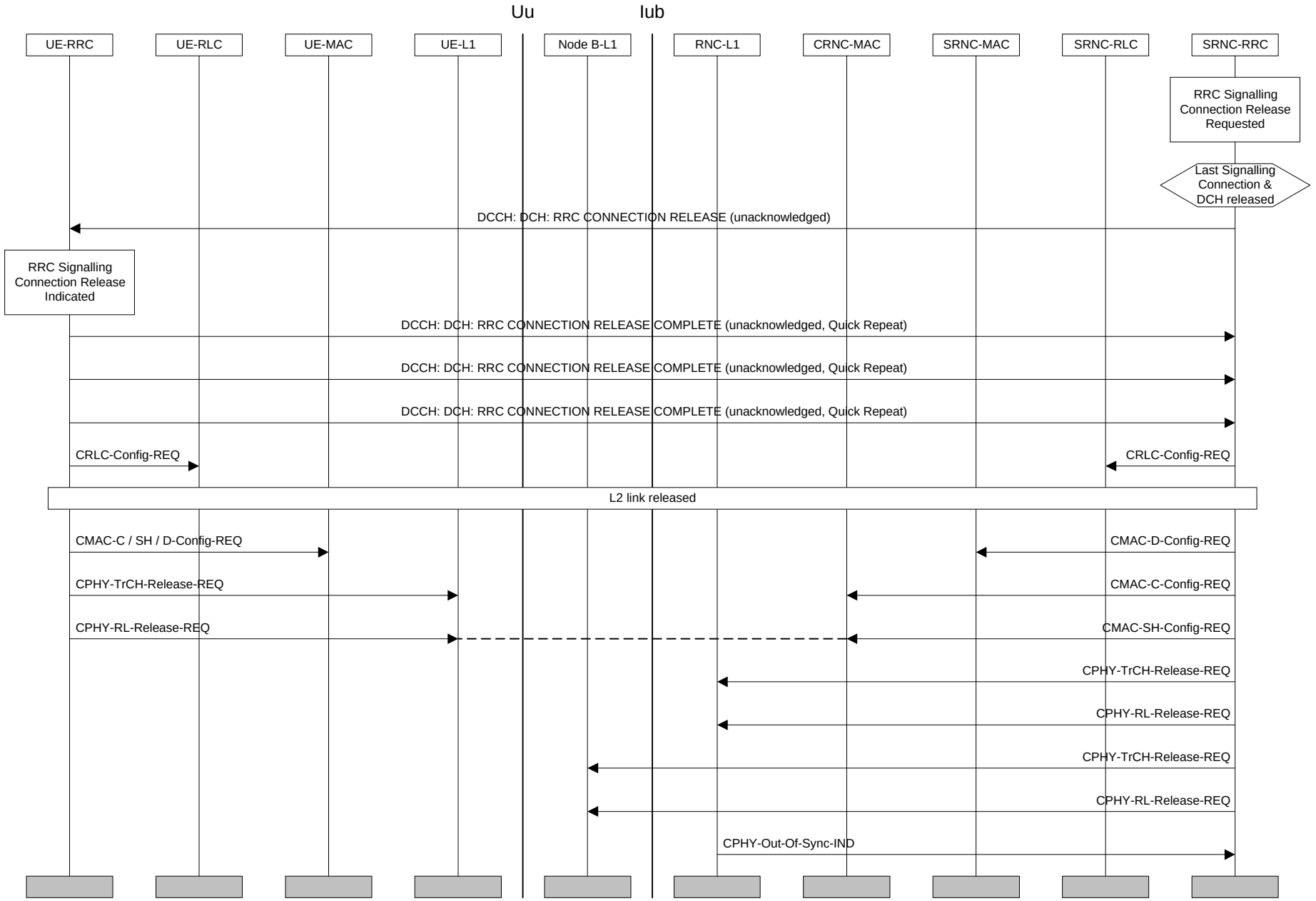
help.doc

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

7.1.3 Normal RRC Connection Release

A normal RRC Connection Release procedure is initiated on the network side by an RRC Signalling Connection Release request for the last Signalling Connection of a UE. The procedure is slightly different depending on whether the UE has dedicated physical channel(s) allocated.

7.1.3.1 RRC Connection Release from Dedicated Physical Channel


Uu
Iub
UE-RRC
UE-RLC
UE-MAC
UE-L1
Node B-L1
RNC-L1
CRNC-MAC
SRNC-MAC
SRNC-RLC
SRNC-RRC
RRC Signalling Connection Release Requested
Last Signalling Connection & DCH released
DCCH: DCH: RRC CONNECTION RELEASE (unacknowledged)
RRC Signalling Connection Release Indicated
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
CRLC-Config-REQ
CRLC-Config-REQ
L2 link released
CMAC-C / SH / D-Config-REQ
CMAC-D-Config-REQ
CPHY-TrCH-Release-REQ
CMAC-C-Config-REQ
CPHY-RL-Release-REQ
CMAC-SH-Config-REQ
CPHY-TrCH-Release-REQ
CPHY-RL-Release-REQ
CPHY-TrCH-Release-REQ
CPHY-RL-Release-REQ
CPHY-Out-Of-Sync-IND

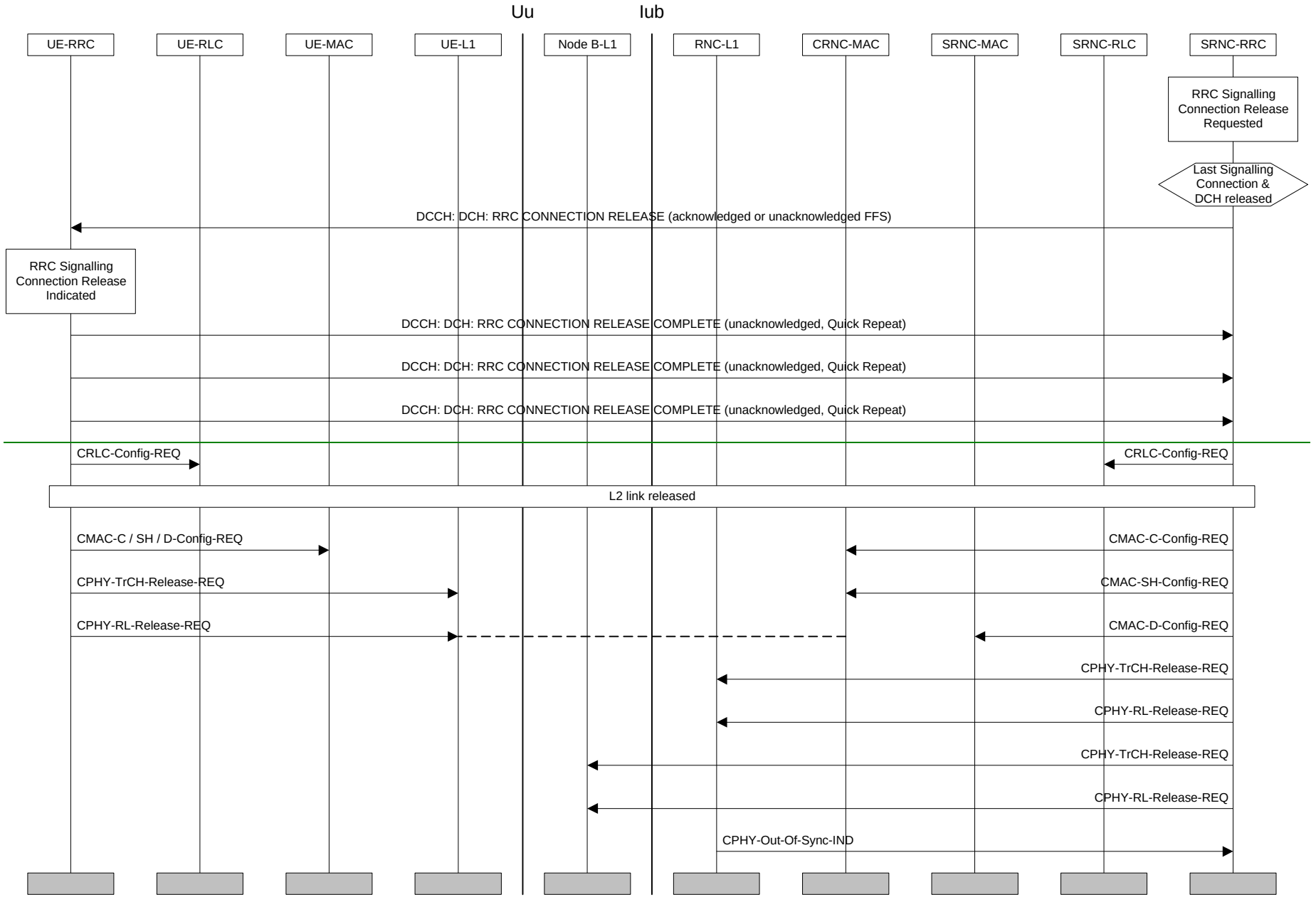

Uu
Iub
UE-RRC
UE-RLC
UE-MAC
UE-L1
Node B-L1
RNC-L1
CRNC-MAC
SRNC-MAC
SRNC-RLC
SRNC-RRC
RRC Signalling Connection Release Requested
Last Signalling Connection & DCH released
DCCH: DCH: RRC CONNECTION RELEASE (acknowledged or unacknowledged FFS)
RRC Signalling Connection Release Indicated
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
DCCH: DCH: RRC CONNECTION RELEASE COMPLETE (unacknowledged, Quick Repeat)
CRLC-Config-REQ
CRLC-Config-REQ
L2 link released
CMAC-C / SH / D-Config-REQ
CMAC-C-Config-REQ
CPHY-TrCH-Release-REQ
CMAC-SH-Config-REQ
CPHY-RL-Release-REQ
CMAC-D-Config-REQ
CPHY-TrCH-Release-REQ
CPHY-RL-Release-REQ
CPHY-TrCH-Release-REQ
CPHY-RL-Release-REQ
CPHY-Out-Of-Sync-IND

Figure 1. RRC Connection Release from Dedicated Physical Channel

The RRC layer entity in the network issues an RRC CONNECTION RELEASE message using ~~acknowledged or~~ unacknowledged mode ~~(FFS)~~ on the DCCH. Upon reception of this message the UE-RRC sends an RRC Signalling Connection Release Indication primitive to NAS The UE replies with an RRC CONNECTION RELEASE COMPLETE message, which is sent in unacknowledged-mode on the dedicated channel. To improve the reliability of the message, quick repeat on RRC-level can be used. The UE will then proceed to release RLC(s), MAC and the radio link(s) after which the UE RRC enters Idle Mode.

The primary method to detect the release of the signalling link in the NW is the RRC CONNECTION RELEASE COMPLETE-message from the UE. Should the message be lost despite the use of quick repeat, the release of the signalling link is detected by the out-of-sync primitive from either Node-B L1 or RNC-L1 (FFS) to RNC RRC. After receiving this primitive, the RNC-RRC layer releases L2 and L1 resources on the network side and enters the idle mode.

7.1.3.2 RRC Connection Release without Dedicated Physical Channel

The RRC layer entity in the network issues an RRC CONNECTION RELEASE message using unacknowledged or acknowledged mode on the DCCH. Upon reception of this message the UE-RRC sends an RRC Signalling Connection Release Indication primitive to NAS and an RRC CONNECTION RELEASE COMPLETE message to UTRAN using acknowledged mode on the DCCH.

[Note: Depending on RLC design, the acknowledgement to RRC CONNECTION RELEASE could be piggybacked to the RRC CONNECTION RELEASE COMPLETE MESSAGE, resulting in no additional messages. Therefore acked / unacked transmission is considered FFS.]

After receiving the RRC CONNECTION RELEASE COMPLETE message the network RRC layer releases L2 resources, sends an RRC Signalling Connection Release confirmation to DC-SAP and goes to Idle Mode (more precisely: only the RRC entity dedicated to this UE goes to Idle Mode).

~~[Note: Depending on RLC design, the acknowledgement to RRC CONNECTION RELEASE could be piggybacked to the RRC CONNECTION RELEASE COMPLETE MESSAGE, resulting in no additional messages. Therefore acked / unacked transmission is considered FFS.]~~

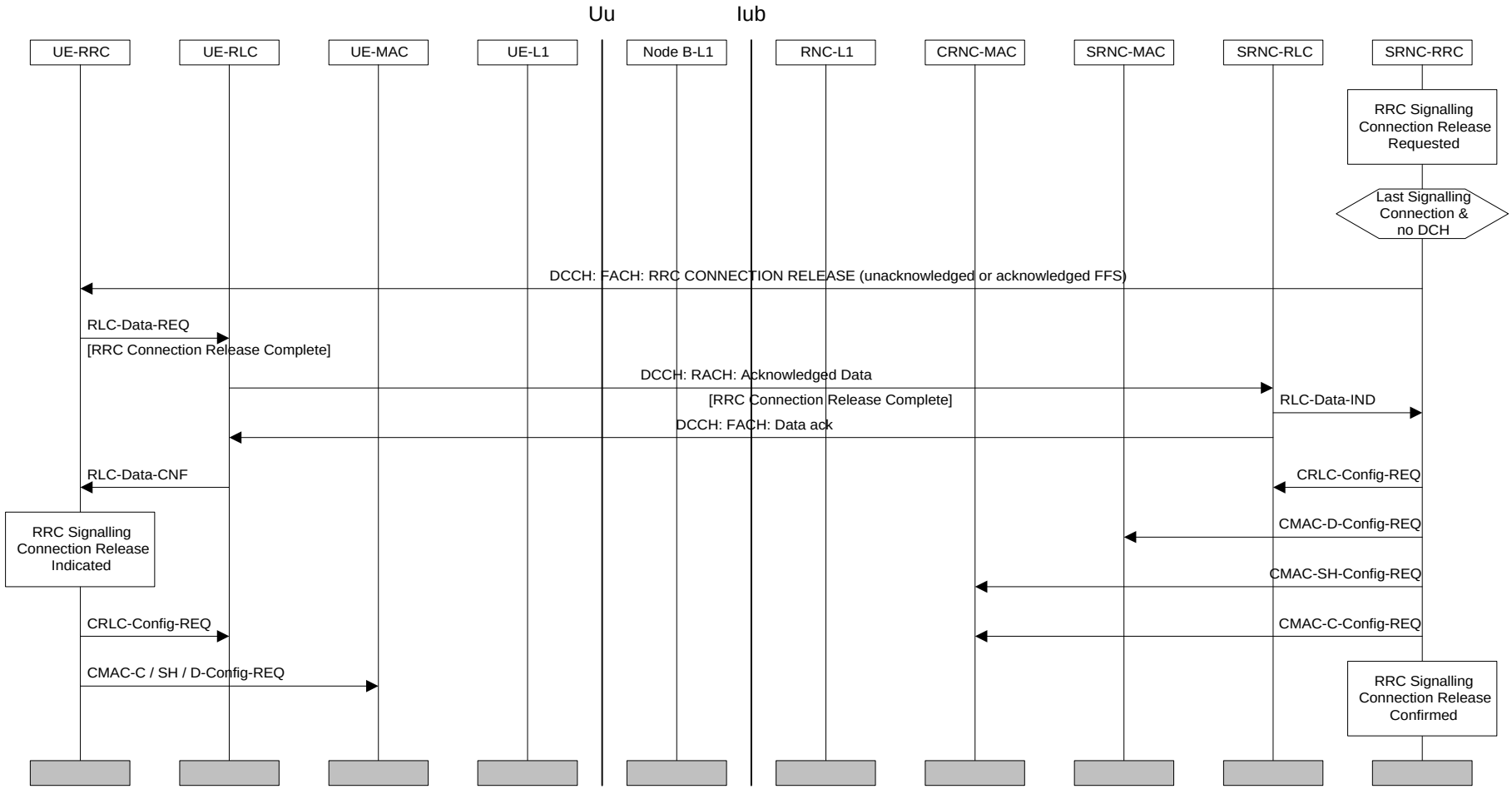


Figure 2: RRC Connection Release without Dedicated Physical Channel