TSG RAN Meeting #22 **RP-030673**
Maui, USA, 9 - 12 December 2003

Title **CRs (Rel-4 and Rel-5 Category A) to TS 25.419 on Correction of finite number of broadcast**
Source **TSG RAN WG3**
Agenda Item **7.4.4**

RAN3 Tdoc	Spec	curr. Vers.	new Vers.	REL	CR	Rev	Cat	Title	Work item
R3-031739	25.419	4.9.0	4.10.0	REL-4	129	-	F	Correction of finite number of broadcast	TEI4
R3-031740	25.419	5.5.0	5.6.0	REL-5	130	-	A	Correction of finite number of broadcast	TEI4

3GPP TSG-RAN3 Meeting #39
San Diego, USA, 17th-21th November 2003

Tdoc ⌘ R3-031739

CR-Form-v7

CHANGE REQUEST

⌘ **25.419** **CR** **129** ⌘ **rev** **-** ⌘ Current version: **4.9.0** ⌘

*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 **X** Core Network **X**

Title:	⌘	Correction of finite number of broadcast
Source:	⌘	RAN3
Work item code:	⌘	TEI4
Date:	⌘	12/11/2003
Category:	⌘	**F**
Release:	⌘	Rel-4

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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	It is not clear if the RNC has to store the messages and their status after it has completed the finite number of broadcasts requested. It is therefore not specified if CBC should initiate a Kill/Write-Place to the RNC.
Summary of change:	⌘	After the completion of the broadcast, the RNC shall release the involved old messages and their status stored for each service area. Impact assessment towards the previous version of the specification (same release): This CR has isolated impact towards the previous version of the specification (same release). This CR has an impact under functional point of view. The impact can be considered isolated because it only affects the Write-Replace function.
Consequences if not approved:	⌘	Interoperability issues on how to interpret the RNC behaviour related to Finite broadcast handling will remain. Risk of inconsistent status between RNC and CBC if contexts are kept hanging in RNC.

Clauses affected:	⌘	8.2.2, 8.3.2			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ TS 25.419 REL-5 CR130
			X	Test specifications	

	X	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/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.

8.2 Write-Replace

8.2.1 General

The purpose of this Write-Replace procedure is to broadcast new information or replace a message already broadcast to a chosen Service Area(s).

8.2.2 Successful Operation

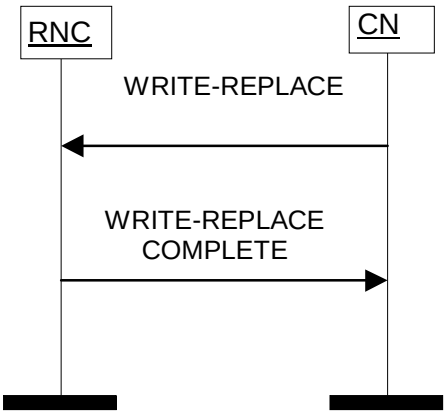

Figure 1: Write-Replace Procedure: Successful Operation

The CN shall initiate the procedure by sending a WRITE-REPLACE message to the RNC.

The presence of a *New Serial Number* IE will indicate that this is a new broadcast. The presence of both the *Old Serial Number* IE and a *New Serial Number* IE will indicate that this message is a replacement of an existing broadcast.

The RNC will initiate broadcasting of a new message or replace a message already broadcast as requested to the service areas as indicated in the *Service Areas List* IE.

The RNC shall uniquely identify the CBS message by the *Message Identifier* IE together with the twelve leftmost bits of the serial number in the *New Serial Number* IE and the *Service Area Identifier* IE.

The RNC shall perform the broadcast according to the value of the *Category* IE as follows:

- The *Category* IE, if given in the WRITE-REPLACE message, shall be treated as follows:

  1. If the value of *Category* IE is indicated as "High Priority", the RNC shall perform the broadcast immediately;

  2. If the value of *Category* IE is indicated as "Background", the RNC shall perform the broadcast when no other broadcast message indicated as "High Priority" or "Normal";

  3. If the value of *Category* IE is indicated as "Normal", the RNC shall perform the broadcast according to the *Repetition Period* IE.

- If the *Category* IE is not given in the WRITE-REPLACE message, the RNC shall perform the broadcast as the same category indicated as "Normal".

The RNC shall pass the *Data Coding Scheme* IE transparently to the radio interface protocol.

The RNC shall pass the *Broadcast Message Content* IE Transparently to the radio interface protocol.

The RNC shall broadcast the message frequently according to the value of the *Number of Broadcasts Requested* IE. If the value is set to "0", the RNC shall broadcast the message until the CN requests otherwise. If the value is different

than “0”, the RNC shall broadcast the message as many times as indicated in the *Number of Broadcasts Requested* IE, and after the completion of the broadcast, the RNC shall release the involved messages and their status stored for each service area.

Upon receipt of the WRITE-REPLACE message the RNC shall respond using the WRITE-REPLACE COMPLETE message containing a *New Serial Number* IE indicating that resources are available as requested for the Service Area(s) specified and a *Number of Broadcasts Completed List* IE to indicate the number of times the version of the old CBS message identified by the *Message Identifier* IE and the *Old Serial Number* IE, has been successfully broadcast to the particular Service Area(s). If the version corresponding to the *Old Serial Number* IE value is not recognized for a particular service area, the number of broadcast completed shall be reported as ‘0’ and the *Number of Broadcasts Compl Info* IE set to ‘unknown’.

If the WRITE-REPLACE message sent from the CN:

- contained a *New Serial Number* IE but not an *Old Serial Number* IE, the *Number of Broadcasts* IE within the *Number of Broadcasts Completed List* IE is set to "0" for each included Service Area in the corresponding WRITE-REPLACE COMPLETE message.

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, an entry is made in the *Number of Broadcasts* IE in the *Number of Broadcasts Completed List* IE for each included Service Area in the corresponding WRITE-REPLACE COMPLETE message. The RNC shall also release the involved old messages and their status stored for each service area.

8.2.3 Unsuccessful Operation

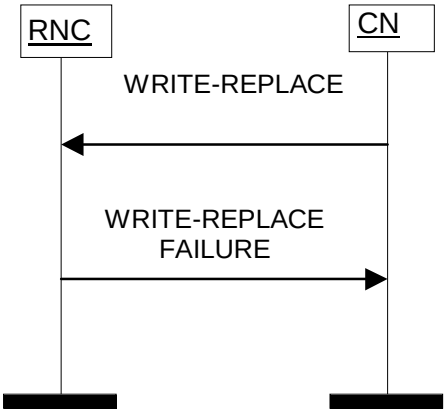

Figure 2: Write-Replace Procedure: Un-Successful Operation

If there is at least one Service Area specified in the WRITE-REPLACE message for which the RNC cannot allocate all the resources requested or for which the RNC cannot complete as requested, then the RNC shall return a WRITE-REPLACE FAILURE message to the CN as an outcome of the procedure. A list of Service Area(s) where the requested resources are unavailable or for which the RNC cannot complete as requested and appropriate cause value shall be provided in this WRITE-REPLACE FAILURE message in the *Failure List* IE.

This WRITE-REPLACE FAILURE message may also include those Service Area(s) where the requested resources were available and shall indicate in the *Number of Broadcasts Completed* List IE those Service Area(s) which completed the request successfully.

If the WRITE-REPLACE message sent from the CN:

- contained a *New Serial Number* IE but not an *Old Serial Number* IE, the *Number of Broadcasts* IE within the *Number of Broadcasts Completed List* IE is set to ‘0’ for each included Service Area in the corresponding WRITE-REPLACE FAILURE message.

- contained a New Serial Number IE but not an Old Serial Number IE, and the CBS message is already used by the RNC, it shall consider the Write Replace procedure as failed for this Service Area and return a WRITE-REPLACE-FAILURE message with the Service Area Identifier of this particular Service Area included in the *Failure List* IE together with the cause value "Message-reference already-used".

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, an entry is made in *Number of Broadcasts* IE in the *Number of Broadcasts Completed List* IE for each included Service Area in the corresponding WRITE-REPLACE FAILURE message.

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, but if the old CBS message is unknown to the RNC (i.e. it can not execute the kill request) for a particular Service Area, it shall consider the Write Replace procedure as failed for this Service Area. When the procedure is completed, the RNC shall return a WRITE-REPLACE-FAILURE message which includes the Service Area Identifier of this particular Service Area in the *Failure List* IE together with the cause value "Valid-CN-message-not-identified".

8.2.4 Abnormal Conditions

8.3 Kill

8.3.1 General

The purpose of the Kill procedure is to stop the broadcast of the indicated message.

8.3.2 Successful Operation

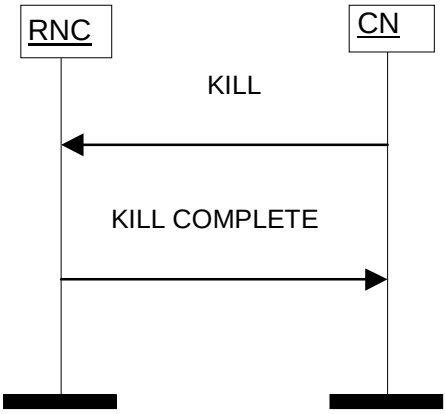

Figure 3: Kill Procedure: Successful Operation

The CN shall initiate the procedure by sending a KILL message to the RNC.

Upon receipt of the KILL message the RNC shall stop broadcasting the CBS message, which is indicated in the *Message Identifier* IE and the twelve leftmost bits of the *Old Serial Number* IE, in the indicated Service Area(s) as indicated in the *Service Areas List* IE.

The RNC shall respond using the KILL COMPLETE message, containing the *Old Serial Number* IE copied from the request and the *Number of Broadcast Completed List* IE when all Service Areas successfully stopped the broadcast. It shall indicate in the *Number of Broadcast Completed List* IE for each of these Service Area(s), the number of times the version of the CBS message identified by the *Message Identifier* IE and the *Old Serial Number* IE received has been sent to this particular Service Area(s) for broadcast. The RNC shall also release the involved messages and their status stored for each service area. If the version corresponding to the *Old Serial Number* IE value is not recognized for a particular service area, the number of broadcast completed shall be reported as '0' and the *Number of Broadcasts Compl Info* IE set to 'unknown'.

8.3.3 Unsuccessful Operation

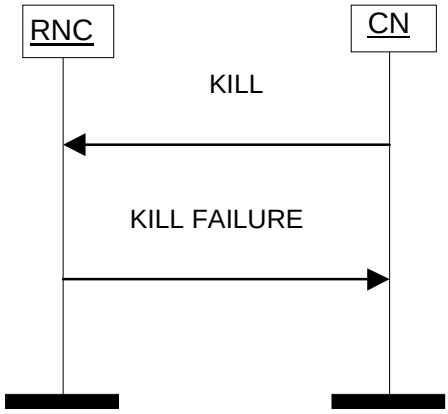

Figure 4: Kill Procedure: Un-Successful Operation

If the RNC fails to stop broadcasting the CBS message as indicated in the KILL message in at least one service area, the RNC shall return the KILL FAILURE message to the CN. A *Failure List* IE indicating the list of Service Area(s) where the CBS message was not recognized or the broadcast could not be stopped together with the appropriate cause value shall be provided in the KILL FAILURE message. This response message may also – if applicable - indicate in the *Number of Broadcasts Completed List* IE those Service Area(s) where the KILL message successfully stopped the broadcast.

8.3.4 Abnormal Conditions

3GPP TSG-RAN3 Meeting #39
San Diego, USA, 17th-21th November 2003

Tdoc ⌘ R3-031740

CR-Form-v7

CHANGE REQUEST

⌘ **25.419** **CR** **130** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

*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 **X** Core Network **X**

Title:	⌘	Correction of finite number of broadcast
Source:	⌘	RAN3
Work item code:	⌘	TEI4
Date:	⌘	12/11/2003
Category:	⌘	**A**
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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	It is not clear if the RNC has to store the messages and their status after it has completed the finite number of broadcasts requested. It is therefore not specified if CBC should initiate a Kill/Write-Place to the RNC.
Summary of change:	⌘	After the completion of the broadcast, the RNC shall release the involved old messages and their status stored for each service area. Impact assessment towards the previous version of the specification (same release): This CR has isolated impact towards the previous version of the specification (same release). This CR has an impact under functional point of view. The impact can be considered isolated because it only affects the Write-Replace function.
Consequences if not approved:	⌘	Interoperability issues on how to interpret the RNC behaviour related to Finite broadcast handling will remain. Risk of inconsistent status between RNC and CBC if contexts are kept hanging in RNC.

Clauses affected:	⌘	8.2.2, 8.3.2			
		Y	**N**		
Other specs affected:	⌘	**X**		Other core specifications	⌘ TS 25.419 REL-4 CR129
			X	Test specifications	

	X	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/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.

8.2 Write-Replace

8.2.1 General

The purpose of this Write-Replace procedure is to broadcast new information or replace a message already broadcast to a chosen Service Area(s).

8.2.2 Successful Operation

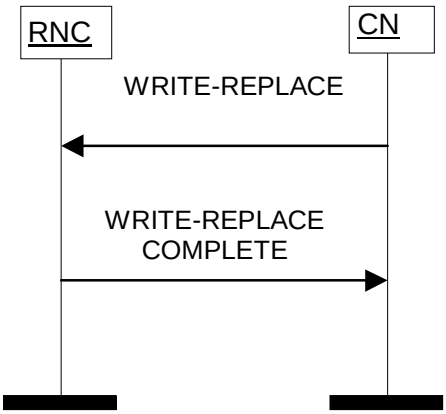

Figure 1: Write-Replace Procedure: Successful Operation

The CN shall initiate the procedure by sending a WRITE-REPLACE message to the RNC.

The presence of a *New Serial Number* IE will indicate that this is a new broadcast. The presence of both the *Old Serial Number* IE and a *New Serial Number* IE will indicate that this message is a replacement of an existing broadcast.

The RNC will initiate broadcasting of a new message or replace a message already broadcast as requested to the service areas as indicated in the *Service Areas List* IE.

The RNC shall uniquely identify the CBS message by the *Message Identifier* IE together with the twelve leftmost bits of the serial number in the *New Serial Number* IE and the *Service Area Identifier* IE.

The RNC shall perform the broadcast according to the value of the *Category* IE as follows:

- The *Category* IE, if given in the WRITE-REPLACE message, shall be treated as follows:

  1. If the value of *Category* IE is indicated as "High Priority", the RNC shall perform the broadcast immediately;

  2. If the value of *Category* IE is indicated as "Background", the RNC shall perform the broadcast when no other broadcast message indicated as "High Priority" or "Normal";

  3. If the value of *Category* IE is indicated as "Normal", the RNC shall perform the broadcast according to the *Repetition Period* IE.

- If the *Category* IE is not given in the WRITE-REPLACE message, the RNC shall perform the broadcast as the same category indicated as "Normal".

The RNC shall pass the *Data Coding Scheme* IE transparently to the radio interface protocol.

The RNC shall pass the *Broadcast Message Content* IE Transparently to the radio interface protocol.

The RNC shall broadcast the message frequently according to the value of the *Number of Broadcasts Requested* IE. If the value is set to "0", the RNC shall broadcast the message until the CN requests otherwise. If the value is different

than “0”, the RNC shall broadcast the message as many times as indicated in the *Number of Broadcasts Requested* IE, and after the completion of the broadcast, the RNC shall release the involved messages and their status stored for each service area.

Upon receipt of the WRITE-REPLACE message the RNC shall respond using the WRITE-REPLACE COMPLETE message containing a *New Serial Number* IE indicating that resources are available as requested for the Service Area(s) specified and a *Number of Broadcasts Completed List* IE to indicate the number of times the version of the old CBS message identified by the *Message Identifier* IE and the *Old Serial Number* IE, has been successfully broadcast to the particular Service Area(s). If the version corresponding to the *Old Serial Number* IE value is not recognized for a particular service area, the number of broadcast completed shall be reported as ‘0’ and the *Number of Broadcasts Compl Info* IE set to ‘unknown’.

If the WRITE-REPLACE message sent from the CN:

- contained a *New Serial Number* IE but not an *Old Serial Number* IE, the *Number of Broadcasts* IE within the *Number of Broadcasts Completed List* IE is set to "0" for each included Service Area in the corresponding WRITE-REPLACE COMPLETE message.

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, an entry is made in the *Number of Broadcasts* IE in the *Number of Broadcasts Completed List* IE for each included Service Area in the corresponding WRITE-REPLACE COMPLETE message. The RNC shall also release the involved old messages and their status stored for each service area.

8.2.3 Unsuccessful Operation

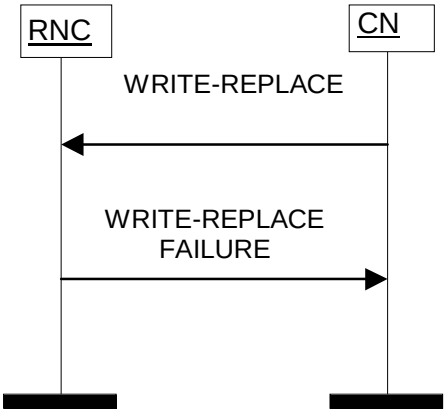

Figure 2: Write-Replace Procedure: Un-Successful Operation

If there is at least one Service Area specified in the WRITE-REPLACE message for which the RNC cannot allocate all the resources requested or for which the RNC cannot complete as requested, then the RNC shall return a WRITE-REPLACE FAILURE message to the CN as an outcome of the procedure. A list of Service Area(s) where the requested resources are unavailable or for which the RNC cannot complete as requested and appropriate cause value shall be provided in this WRITE-REPLACE FAILURE message in the *Failure List* IE.

This WRITE-REPLACE FAILURE message may also include those Service Area(s) where the requested resources were available and shall indicate in the *Number of Broadcasts Completed* List IE those Service Area(s) which completed the request successfully.

If the WRITE-REPLACE message sent from the CN:

- contained a *New Serial Number* IE but not an *Old Serial Number* IE, the *Number of Broadcasts* IE within the *Number of Broadcasts Completed List* IE is set to ‘0’ for each included Service Area in the corresponding WRITE-REPLACE FAILURE message.

- contained a *New Serial Number* IE but not an *Old Serial Number* IE, and the CBS message is already used by the RNC, it shall consider the Write Replace procedure as failed for this Service Area and return a WRITE-REPLACE-FAILURE message with the Service Area Identifier of this particular Service Area included in the *Failure List* IE together with the cause value "Message-reference already-used".

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, an entry is made in *Number of Broadcasts* IE in the *Number of Broadcasts Completed List* IE for each included Service Area in the corresponding WRITE-REPLACE FAILURE message.

- contained both the *New Serial Number* IE and the *Old Serial Number* IE, but if the old CBS message is unknown to the RNC (i.e. it can not execute the kill request) for a particular Service Area, it shall consider the Write Replace procedure as failed for this Service Area. When the procedure is completed, the RNC shall return a WRITE-REPLACE-FAILURE message which includes the Service Area Identifier of this particular Service Area in the *Failure List* IE together with the cause value "Valid-CN-message-not-identified".

8.2.4 Abnormal Conditions

8.3 Kill

8.3.1 General

The purpose of the Kill procedure is to stop the broadcast of the indicated message.

8.3.2 Successful Operation

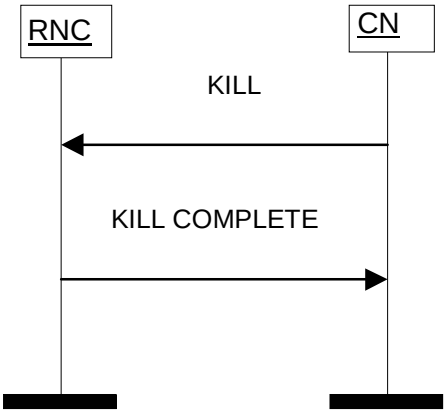

Figure 3: Kill Procedure: Successful Operation

The CN shall initiate the procedure by sending a KILL message to the RNC.

Upon receipt of the KILL message the RNC shall stop broadcasting the CBS message, which is indicated in the *Message Identifier* IE and the twelve leftmost bits of the *Old Serial Number* IE, in the indicated Service Area(s) as indicated in the *Service Areas List* IE.

The RNC shall respond using the KILL COMPLETE message, containing the *Old Serial Number* IE copied from the request and the *Number of Broadcast Completed List* IE when all Service Areas successfully stopped the broadcast. It shall indicate in the *Number of Broadcast Completed List* IE for each of these Service Area(s), the number of times the version of the CBS message identified by the *Message Identifier* IE and the *Old Serial Number* IE received has been sent to this particular Service Area(s) for broadcast. The RNC shall also release the involved messages and their status stored for each service area. If the version corresponding to the *Old Serial Number* IE value is not recognized for a particular service area, the number of broadcast completed shall be reported as '0' and the *Number of Broadcasts Compl Info* IE set to 'unknown'.

8.3.3 Unsuccessful Operation

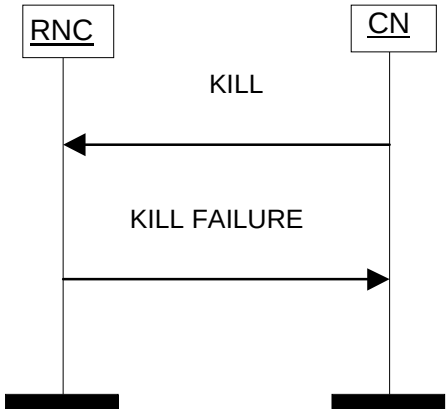

Figure 4: Kill Procedure: Un-Successful Operation

If the RNC fails to stop broadcasting the CBS message as indicated in the KILL message in at least one service area, the RNC shall return the KILL FAILURE message to the CN. A *Failure List* IE indicating the list of Service Area(s) where the CBS message was not recognized or the broadcast could not be stopped together with the appropriate cause value shall be provided in the KILL FAILURE message. This response message may also – if applicable - indicate in the *Number of Broadcasts Completed List* IE those Service Area(s) where the KILL message successfully stopped the broadcast.

8.3.4 Abnormal Conditions