TSG RAN Meeting #17 Biarritz, France, 3 - 6 September, 2002

RP-020606

Title CRs (Rel-4 and Rel-5 Category A) to TS 25.413

Source TSG RAN WG3

Agenda Item 7.3.4

| RAN3 Tdoc | Spec | curr. | new Vers. | REL | CR | Rev | Cat | Title | Work item |
|-----------|--------|-------|-----------|-------|-----|-----|-----|--|-----------|
| | | Vers. | | | | | | | |
| R3-021837 | 25.413 | 4.5.0 | 4.6.0 | REL-4 | 480 | - | F | Erroneous criticality in DATA VOLUME REPORT REQUEST a.o. | TEI4 |
| R3-021838 | 25.413 | 5.1.0 | 5.2.0 | REL-5 | 481 | - | Α | Erroneous criticality in DATA VOLUME REPORT REQUEST a.o. | TEI4 |
| R3-022099 | 25.413 | 4.5.0 | 4.6.0 | REL-4 | 512 | - | F | LCS alignment with stage 2 | TEI4 |
| R3-022100 | 25.413 | 5.1.0 | 5.2.0 | REL-5 | 513 | - | Α | LCS alignment with stage 2 | TEI4 |
| R3-022098 | 25.413 | 4.5.0 | 4.6.0 | REL-4 | 511 | - | F | New cause value for RAB release request | TEI4 |
| R3-022097 | 25.413 | 5.1.0 | 5.2.0 | REL-5 | 503 | 1 | Α | New cause value for RAB release request | TEI4 |

3GPP TSG-RAN WG3 Meeting #31

| Stockholm, Sweden, 19 th – 23 rd August, 2002 | | | | | | | | | | |
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| Proposed change affects: UICC apps# ME Radio Access Network X Core Network X | | | | | | | | | | |
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| | | .17 | | | | | | | | |
| Category: # F 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. Release: # Rel-4 Use one of the following releases. Use one of the following releases. R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-5 (Release 5) Rel-6 (Release 6) | | | | | | | eases: | | | |
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| Reason for o | enange: ж | There is a m ASN.1 code | | | | | | | rmat and t | tne |
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| This CR has no impact towards the previous version of the specification (sa release) since according to subclause 9.1.1 of RANAP the criticality in the A code takes precedence over the criticality in the tabular format in case of misalignment. | | | | | | e ASN.1 | | | | |
| Consequence not approve | | RANAP will of any implement is valid. | | | | | | | | |
| Clauses affe | cted: ೫ | 9.1.11, 9.1.1 | 9, 9.1.31, 9. | 1.44, 9.1.4 | 5 | | | | | |
| Other specs affected: | X | X Test sp | core specifications | | ¥ 2 | 25.4 ⁻ | 13 V.5.1.0 C | R481 | | |

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.

9.1.11 RELOCATION REQUEST ACKNOWLEDGE

This message is sent by the target RNC to inform the CN about the result of the resource allocation for the requested relocation.

Direction: RNC \rightarrow CN.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|--|----------|-------------------------------------|-----------------------|---|-------------|-------------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| Target RNC To Source RNC Transparent Container | 0 | | 9.2.1.30 | | YES | ignore |
| RABs Setup List | 0 | | | | YES | rejectignore |
| >RABs Setup Item IEs | | 1 to <maxnoofrabs></maxnoofrabs> | | | EACH | reject |
| >>RAB ID | M | | 9.2.1.2 | | - | |
| >>Transport Layer Address | 0 | | 9.2.2.1 | | - | |
| >>lu Transport Association | 0 | | 9.2.2.2 | | - | |
| >>Assigned RAB Parameter Values | 0 | | 9.2.1.44 | | YES | ignore |
| RABs Failed To Setup List | 0 | | | | YES | ignore |
| >RABs Failed To | | 1 to | | | EACH | ignore |
| Setup Item IEs | | <maxnoofrabs></maxnoofrabs> | | | | |
| >>RAB ID | M | | 9.2.1.2 | | - | |
| >>Cause | M | | 9.2.1.4 | | - | |
| Chosen Integrity Protection Algorithm | 0 | | 9.2.1.13 | Indicates the Integrity Protection algorithm that will be used by the target RNC. | YES | ignore |
| Chosen Encryption Algorithm Criticality Diagnostics | 0 | | 9.2.1.14 | Indicates the Encryption algorithm that will be used by the target RNC. | YES | ignore |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.19 SRNS CONTEXT REQUEST

This message is sent by the CN to source RNC to indicate the PS RABs for which context transfer shall be performed.

Direction: $CN \rightarrow RNC$.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---|----------|-------------------------------------|-----------------------|-----------------------|-------------|--------------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| RABs Subject To Data Forwarding List | М | | | | YES | reject ignore |
| >RABs Subject To Data Forwarding Item IEs | | 1 to <maxnoofrabs></maxnoofrabs> | | | EACH | reject |
| >>RAB ID | M | | 9.2.1.2 | | - | |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.31 DATA VOLUME REPORT REQUEST

This message is sent by the CN to request unsuccessfully transmitted data volumes for specific RABs.

Direction: $CN \rightarrow RNC$.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---------------------------------|----------|-----------------------------|-----------------------|-----------------------|-------------|--------------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| RABs Data Volume Report List | М | | | | YES | reject ignore |
| >RABs Data Volume | | 1 to | | | EACH | reject |
| Report Item IEs | | <maxnoofrabs></maxnoofrabs> | | | | |
| >>RAB ID | M | | 9.2.1.2 | | - | |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.44 RESET RESOURCE

This message is sent by either CN or RNC. The sending entity informs the receiving entity that the sending requests the receiving entity to release resources and references associated to Iu signalling connection identifiers in the message.

Direction: CN $\leftarrow \rightarrow$ RNC.

Signalling bearer mode: Connectionless.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---------------------------------------|----------|---|-----------------------|-----------------------|-------------|----------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| CN Domain Indicator | M | | 9.2.1.5 | | YES | reject |
| Cause | M | | 9.2.1.4 | | YES | ignore |
| Reset Resource List | М | | | | YES | rejectignore |
| >Reset Resource Item IEs | | 1 to <maxnooflusigco nlds></maxnooflusigco | | | EACH | reject |
| >>Iu Signalling Connection Identifier | M | | 9.2.1.38 | | - | |
| Global RNC-ID | 0 | | 9.2.1.39 | | YES | ignore |
| Global CN-ID | 0 | | 9.2.1.46 | | YES | ignore |

| Range bound | Explanation |
|--------------------|--|
| maxnoofluSigConlds | Maximum no. of lu signalling connection identifiers. Value is 250. |

9.1.45 RESET RESOURCE ACKNOWLEDGE

This message is sent by either the CN or RNC inform the CN or RNC that the RESET RESOURCE message has been received.

Direction: CN $\leftarrow \rightarrow$ RNC.

Signalling bearer mode: Connectionless.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---|----------|---|-----------------------|---|-------------|----------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| CN Domain Indicator | M | | 9.2.1.5 | | YES | reject |
| Reset Resource List | M | | | | YES | rejectignore |
| >Reset Resource Item IEs | | 1 to <maxnooflusigco nlds></maxnooflusigco | | This list shall be in the same order as the list received in the RESET RESOURC E message. | EACH | reject |
| >>Iu Signalling Connection Identifier | M | | 9.2.1.38 | | - | |
| Global RNC-ID | 0 | | 9.2.1.39 | | YES | ignore |
| Criticality Diagnostics | 0 | | 9.2.1.35 | | YES | ignore |
| Global CN-ID | 0 | | 9.2.1.46 | | YES | ignore |

| Range bound | Explanation |
|--------------------|--|
| maxnoofluSigConIds | Maximum no. of lu signalling connection identifiers. Value is 250. |

3GPP TSG-RAN WG3 Meeting #31

| Stockho | lm, Sw | eden | , 19 th | – 23 rd | August, | 2002 | | | | | | | |
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| This CR has no impact towards the previous version of the specification release) since according to subclause 9.1.1 of RANAP the criticality in code takes precedence over the criticality in the tabular format in case misalignment. | | | | | | | | the | | | | | |
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Other comments: #

How to create CRs using this form:

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- 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.

9.1.11 RELOCATION REQUEST ACKNOWLEDGE

This message is sent by the target RNC to inform the CN about the result of the resource allocation for the requested relocation.

Direction: RNC \rightarrow CN.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|--|----------|-------------------------------------|-----------------------|---|-------------|----------------------|
| Message Type | М | | 9.2.1.1 | | YES | reject |
| Target RNC To Source RNC Transparent Container | 0 | | 9.2.1.30 | | YES | ignore |
| New BSS To Old BSS Information | 0 | | 9.2.1.47 | Defined in [11]. | YES | ignore |
| RABs Setup List | 0 | | | | YES | rejectignore |
| >RABs Setup Item | | 1 to <maxnoofrabs></maxnoofrabs> | | | EACH | reject |
| >>RAB ID | M | | 9.2.1.2 | | - | |
| >>Transport Layer Address | 0 | | 9.2.2.1 | IPv6 or IPv4 address if no other TLA included. IPv4 address if other TLA included. | - | |
| >>Iu Transport | 0 | | 9.2.2.2 | Related to | - | |
| Association | | | | TLA above. | | |
| >>Assigned RAB Parameter Values | 0 | | 9.2.1.44 | | YES | ignore |
| >>Transport Layer Address | 0 | | 9.2.2.1 | IPv6 address if included. | YES | ignore |
| >>lu Transport Association | 0 | | 9.2.2.2 | Related to TLA above. | YES | ignore |
| RABs Failed To Setup List | 0 | | | | YES | ignore |
| >RABs Failed To Setup Item IEs | | 1 to <maxnoofrabs></maxnoofrabs> | | | EACH | ignore |
| >>RAB ID | M | | 9.2.1.2 | | - | |
| >>Cause | M | | 9.2.1.4 | | - | |
| Chosen Integrity Protection Algorithm | 0 | | 9.2.1.13 | Indicates the Integrity Protection algorithm that will be used by the target RNC. | YES | ignore |
| Chosen Encryption Algorithm | 0 | | 9.2.1.14 | Indicates the Encryption algorithm that will be used by the target RNC. | YES | ignore |
| Criticality Diagnostics | 0 | | 9.2.1.35 | | YES | ignore |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.19 SRNS CONTEXT REQUEST

This message is sent by the CN to source RNC to indicate the PS RABs for which context transfer shall be performed.

Direction: $CN \rightarrow RNC$.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---|----------|-------------------------------------|-----------------------|-----------------------|-------------|--------------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| RABs Subject To Data Forwarding List | М | | | | YES | reject ignore |
| >RABs Subject To Data Forwarding Item IEs | | 1 to <maxnoofrabs></maxnoofrabs> | | | EACH | reject |
| >>RAB ID | M | | 9.2.1.2 | | - | |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.31 DATA VOLUME REPORT REQUEST

This message is sent by the CN to request unsuccessfully transmitted data volumes for specific RABs.

Direction: $CN \rightarrow RNC$.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---------------------------------|----------|-----------------------------|-----------------------|-----------------------|-------------|--------------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| RABs Data Volume Report List | М | | | | YES | reject ignore |
| >RABs Data Volume | | 1 to | | | EACH | reject |
| Report Item IEs | | <maxnoofrabs></maxnoofrabs> | | | | |
| >>RAB ID | M | | 9.2.1.2 | | - | |

| Range bound | Explanation |
|-------------|---|
| maxnoofRABs | Maximum no. of RABs for one UE. Value is 256. |

9.1.44 RESET RESOURCE

This message is sent by either CN or RNC. The sending entity informs the receiving entity that the sending requests the receiving entity to release resources and references associated to Iu signalling connection identifiers in the message.

Direction: CN $\leftarrow \rightarrow$ RNC.

Signalling bearer mode: Connectionless.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---------------------------------------|----------|---|-----------------------|-----------------------|-------------|----------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| CN Domain Indicator | M | | 9.2.1.5 | | YES | reject |
| Cause | M | | 9.2.1.4 | | YES | ignore |
| Reset Resource List | М | | | | YES | rejectignore |
| >Reset Resource Item IEs | | 1 to <maxnooflusigco nlds></maxnooflusigco | | | EACH | reject |
| >>lu Signalling Connection Identifier | M | | 9.2.1.38 | | - | |
| Global RNC-ID | 0 | | 9.2.1.39 | | YES | ignore |
| Global CN-ID | 0 | | 9.2.1.46 | | YES | ignore |

| Range bound | Explanation |
|--------------------|--|
| maxnoofluSigConlds | Maximum no. of lu signalling connection identifiers. Value is 250. |

9.1.45 RESET RESOURCE ACKNOWLEDGE

This message is sent by either the CN or RNC inform the CN or RNC that the RESET RESOURCE message has been received.

Direction: CN $\leftarrow \rightarrow$ RNC.

Signalling bearer mode: Connectionless.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description | Criticality | Assigned Criticality |
|---|----------|---|-----------------------|---|-------------|----------------------|
| Message Type | M | | 9.2.1.1 | | YES | reject |
| CN Domain Indicator | M | | 9.2.1.5 | | YES | reject |
| Reset Resource List | M | | | | YES | rejectignore |
| >Reset Resource Item IEs | | 1 to <maxnooflusigco nlds></maxnooflusigco | | This list shall be in the same order as the list received in the RESET RESOURC E message. | EACH | reject |
| >>Iu Signalling Connection Identifier | M | | 9.2.1.38 | | - | |
| Global RNC-ID | 0 | | 9.2.1.39 | | YES | ignore |
| Criticality Diagnostics | 0 | | 9.2.1.35 | | YES | ignore |
| Global CN-ID | 0 | | 9.2.1.46 | | YES | ignore |

| Range bound | Explanation |
|--------------------|--|
| maxnoofluSigConIds | Maximum no. of lu signalling connection identifiers. Value is 250. |

3GPP TSG-RAN3 Meeting #31 Arlanda, Sweden, 19th-23th August 2002

Tdoc # R3-022097

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Reason for change: ₩

RRC specifications allow two timers for RAB release. The first could for example be used to release real time RABs when there is a failure in the radio link of a short duration, and the second could be used to release the background RABs and Iu when there is a long term break in radio link. Thus the RABs associated with the first timer should be released by the network so the network and UE are in sync before the second timer requests the release of Iu connection. A RAB release request could thus be triggered due to a radio connection failure.

Rel-6

(Release 6)

This topic was discussed in SA2#25 and on email reflector . 23.060 § 9.2.3.5 defines the behaviour of the CN and UE on receiving a RAB release due to loss of radio coverage and states that both UE and SGSN shall set maximum bit rate to 0kb/s. The absence of explicit mention of the "radio connection with UE lost" cause value in RANAP RAB Release Request caused some misunderstanding in SA2.

It is hence clarified that "radio connection with UE lost" can be used with RAB Release Request. The current specification does not indicate this possibility.

Summary of change:

An additional cause value Radio connection failure is added to the list of typical causes in the RAB release request

Consequences if not approved:

Mismatch of RANAP with RRC specification (TS 25.331) and TS 23.060 will remain. RAB Release Request with due to cause "radio connection with UE lost" failure cannot may not be properly signalled to the CN to take appropriate action. This can result in unsyncronised PDP context states in UE and SGSN.

| | | No im | pact on previous version of the | specifi | ication; this is a new addition in release 45. |
|-----------------------|---|------------|---|---------|--|
| Clauses affected: | ж | 8.3.2 | | | |
| Other specs affected: | ¥ | Y N X X | Other core specifications Test specifications | ж | 25.413 Rel 4 CR 511 |

Backward compatibility:

X O&M Specifications

How to create CRs using this form:

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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 \(\mathcal{H} \) 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.

[page break]

Other comments:

-----CUT-----

8.3 RAB Release Request

8.3.1 General

The purpose of the RAB Release Request procedure is to enable UTRAN to request the release of one or several radio access bearers. The procedure uses connection oriented signalling.

8.3.2 Successful Operation



Figure 2: RAB Release Request procedure. Successful operation.

The RNC shall initiate the procedure by generating a RAB RELEASE REQUEST message towards the CN. The *RABs To Be Released* IE shall indicate the list of RABs requested to release and the *Cause* IE associated to each RAB shall indicate the reason for the release, e.g. "RAB pre-empted", "Release due to UTRAN Generated Reason", "Radio Connection With UE Lost".

Upon reception of the RAB RELEASE REQUEST message, the CN should initiate the appropriate release procedure for the identified RABs in the RAB RELEASE REQUEST message. It is up to the CN to decide how to react to the request.

Interaction with Iu Release Command:

If no RABs will remain according to the RAB RELEASE REQUEST message, the CN may decide to initiate the Iu Release procedure if it does not want to keep the Iu signalling connection. The cause value to use is "No Remaining RAB".

Interaction with RAB Assignment (release RAB):

If the CN decides to release some or all indicated RABs, the CN may decide to invoke the RAB Assignment procedure (release RAB) to this effect.

8.3.3 Abnormal Conditions

Not applicable.

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Tdoc # R3-022098

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| | | be found in | | | | 9000 | Joan | | Rel-5 | | lease 5) | | |
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| | | short | durat | ion, and the | e secono | d cou | ld be | use | d to releas | e the b | ackgrou | nd F | RABs |

RRC specifications allow two timers for RAB release. The first could for example be used to release real time RABs when there is a failure in the radio link of a short duration, and the second could be used to release the background RABs and Iu when there is a long term break in radio link. Thus the RABs associated with the first timer should be released by the network so the network and UE are in sync before the second timer requests the release of Iu connection. A RAB release request could thus be triggered due to a radio connection failure.

This was discussed in SA2#25 and on email reflector . 23.060 \S 9.2.3.5 defines the behaviour of the CN and UE on receiving a RAB release due to loss of radio coverage and states that both UE and SGSN shall set maximum bit rate to 0kb/s. The absence of explicit mention of the "radio connection with UE lost" cause value in RANAP RAB Release Request caused some misunderstanding in SA2.

It is hence clarified that "radio connection with UE lost" can be used with RAB Release Request.

Summary of change:

An additional cause value Radio connection failure is added to the list of typical causes in the RAB release request

Consequences if not approved:

Mismatch of RANAP with RRC specification (TS 25.331) and TS 23.060 will remain. RAB Release Request with cause "radio connection with UE lost" failure may not be properly signalled to the CN to take appropriate action. This can result in unsyncronised PDP context states in UE and SGSN.

Backward compatibility:

| | No impact on previous version of the specification; this is a new addition in release 4. |
|-----------------------|--|
| Clauses affected: | ж <mark>8.3.2</mark> |
| Other specs affected: | Y N X Other core specifications |
| Other comments: | <u></u> |

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 \(\mathcal{H} \) 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.

[page break]

8.3 RAB Release Request

8.3.1 General

The purpose of the RAB Release Request procedure is to enable UTRAN to request the release of one or several radio access bearers. The procedure uses connection oriented signalling.

8.3.2 Successful Operation



Figure 2: RAB Release Request procedure. Successful operation.

The RNC shall initiate the procedure by generating a RAB RELEASE REQUEST message towards the CN. The *RABs To Be Released* IE shall indicate the list of RABs requested to release and the *Cause* IE associated to each RAB shall indicate the reason for the release, e.g. "RAB pre-empted", "Release due to UTRAN Generated Reason", "Radio Connection With UE Lost".

Upon reception of the RAB RELEASE REQUEST message, the CN should initiate the appropriate release procedure for the identified RABs in the RAB RELEASE REQUEST message. It is up to the CN to decide how to react to the request.

Interaction with Iu Release Command:

If no RABs will remain according to the RAB RELEASE REQUEST message, the CN may decide to initiate the Iu Release procedure if it does not want to keep the Iu signalling connection. The cause value to use is "No Remaining RAB".

Interaction with RAB Assignment (release RAB):

If the CN decides to release some or all indicated RABs, the CN may decide to invoke the RAB Assignment procedure (release RAB) to this effect.

8.3.3 Abnormal Conditions

Not applicable.

3GPP TSG-RAN3 Meeting #31 Arlanda, Sweden, 19th – 23rd August 2002

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Other core specifications

CR071 29.010 REL-5 and REL-4 Other specs

| affected: | X Test specifications O&M Specifications | CR513 25.413 REL-5 |
|-----------------|--|--------------------|
| Other comments: | ж | |

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- 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.

8.20 Location Report

8.20.1 General

The purpose of the Location Report procedure is to provide the UE's location information to the CN. The procedure uses connection oriented signalling.

8.20.2 Successful Operation



Figure 22: Location Report procedure. Successful operation.

The serving RNC shall initiate the procedure by generating a LOCATION REPORT message. The LOCATION REPORT message may be used as a response for the LOCATION REPORTING CONTROL message. Also, when a user enters or leaves a classified zone set by O&M, e.g. zone where a disaster occurred, a LOCATION REPORT message shall be sent to the CN including the Service Area of the UE in the *Area Identity* IE. The *Cause* IE shall indicate the appropriate cause value to CN, e.g. "User Restriction Start Indication" and "User Restriction End Indication". The CN shall react to the LOCATION REPORT message with CN vendor specific actions.

For this procedure, only Service Areas that are defined for the PS and CS domains shall be considered.

In case reporting at change of Service Area is requested by the CN, then the RNC shall issue a LOCATION REPORT message.

- whenever the information given in the previous LOCATION REPORT message or INITIAL UE MESSAGE message is not anymore valid.
- upon receipt of the first LOCATION REPORTING CONTROL message following a Relocation Resource Allocation procedure, with *Request Type* IE set to "Change of Service Area", as soon as SAI becomes available in the new SRNC and the relocation procedure has been successfully completed.

In the case when Service Area is reported, the RNC shall include to the LOCATION REPORT message in the *Area Identity* IE the Service Area, which includes at least one of the cells from which the UE is consuming radio resources.

In the case when the LOCATION REPORT message is sent as an answer to a request for a direct report or at a change of Service Area, the *Request Type* IE from the LOCATION REPORTING CONTROL message shall be included.

If the LOCATION REPORT message is sent as an answer to a request for a direct report of Service Area and the current Service Area can not be determined by the RNC, then the *Area Identity* IE shall be omitted and a cause value shall be included to indicate that the request could not be fulfilled, e.g. "Requested Information Not Available" or "Location Reporting Congestion". The RNC may also include the *Last Known Service Area* IE.

If the RNC can not deliver the location information as requested by the CN, due to either the non-support of the requested event or the non-support of the requested report area or if RNC is currently not able to reach the UE, the RNC shall indicate the UE location to be "Undetermined" by omitting the *Area Identity* IE. A cause value shall instead be added to indicate the reason for the undetermined location, e.g. "Requested Request Type not supported" or "Location Reporting Congestion".

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request to report a geographical area with a specific accuracy, the LOCATION REPORT message shall include the *Geographical Area* IE within the *Area Identity* IE containing either a point with indicated uncertainty or a polygon or an other type, which fulfils the requested accuracy as accurately as possible. If, on the other hand, no specific accuracy level was requested in the LOCATION REPORTING CONTROL message, the LOCATION REPORT message shall

include the $Geographical\ Area\ IE$ within the $Area\ Identity\ IE$, the reported $Geographical\ Area\ IE$ may include an accuracy.

8.20.3 Abnormal Conditions

Not applicable.

9.2.1.4 Cause

The purpose of the *Cause* IE is to indicate the reason for a particular event for the RANAP protocol.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|-------------------------------|----------|-------|--|------------------------|
| Choice Cause | | | 1010101100 | |
| >Radio Network Layer Cause | | | INTEGER (RAB pre- empted(1), | Value range is 1 – 64. |
| | | | Trelocoverall Expiry(2), | |
| | | | Trelocprep Expiry(3), | |
| | | | Treloccomplete Expiry(4), | |
| | | | Tqueing Expiry(5), | |
| | | | Relocation Triggered(6), | |
| | | | Unable to Establish During Relocation(8), | |
| | | | Unknown Target RNC(9), | |
| | | | Relocation Cancelled(10), | |
| | | | Successful Relocation(11), | |
| | | | Requested Ciphering and/or Integrity Protection Algorithms not Supported(12), | |
| | | | Conflict with already existing Integrity protection and/or Ciphering information (13), | |
| | | | Failure in the Radio Interface Procedure(14), | |
| | | | Release due to UTRAN Generated Reason(15), | |
| | | | User Inactivity(16), | |
| | | | Time Critical Relocation(17), | |
| | | | Requested Traffic Class not Available(18), | |
| | | | Invalid RAB Parameters Value(19), | |
| | | | Requested Maximum Bit Rate | |

| IE/Group Name | Presence | Range | IE type and | Semantics description |
|---------------|----------|-------|---|-----------------------|
| Choice Cause | | | reference | |
| | | | not Available(20), | |
| | | | Requested Maximum Bit Rate for DL not Available(33), | |
| | | | Requested Maximum Bit Rate for UL not Available(34), | |
| | | | Requested Guaranteed Bit Rate not Available(21), | |
| | | | Requested Guaranteed Bit Rate for DL not Available(35), | |
| | | | Requested Guaranteed Bit Rate for UL not Available(36), | |
| | | | Requested Transfer Delay not Achievable(22), | |
| | | | Invalid RAB Parameters Combination(23), | |
| | | | Condition Violation for SDU Parameters(24), | |
| | | | Condition Violation for Traffic Handling Priority(25), | |
| | | | Condition Violation for Guaranteed Bit Rate(26), | |
| | | | User Plane Versions not Supported(27), | |
| | | | lu UP Failure(28), | |
| | | | TRELOCalloc Expiry (7), | |
| | | | Relocation Failure in Target CN/RNC or Target System (29), | |
| | | | Invalid RAB ID(30), | |
| | | | No remaining RAB(31), | |

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|---------------|----------|-------|--|-----------------------|
| Choice Cause | | | . 5.5.5 | |
| | | | Interaction with other procedure(32), | |
| | | | Repeated Integrity Checking Failure(37), | |
| | | | Requested Request Type not supported(38), | |
| | | | Request superseded(39), | |
| | | | Release due to UE generated signalling connection release(40), | |
| | | | Resource Optimisation Relocation(41), | |
| | | | Requested Information Not Available(42), | |
| | | | Relocation desirable for radio reasons (43), | |
| | | | Relocation not supported in Target RNC or Target system(44), | |
| | | | Directed Retry (45), | |
| | | | Radio Connection With UE Lost(46) | |
| | | | , | |
| | | | RNC unable to establish all RFCs (47), | |
| | | | Deciphering Keys Not Available(48), | |
| | | | Dedicated Assistance data Not Available(49), | |
| | | | Relocation Target not allowed(50), | |
| | | | Location Reporting Congestion(51)) | |

Lots of unaffected parts in 9.2.1.4 not shown

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerning capability is missing. On the other hand, "not available" cause values indicate that the concerning capability is present, but insufficient resources were available to perform the requested action.

| Radio Network Layer cause | Meaning |
|---|---|
| Deciphering Keys Not Available | The action failed because RNC is not able to provide |
| | requested deciphering keys. |
| Conflict with already existing | The action was not performed due to that the requested |
| Integrity protection and/or Ciphering information | security mode configuration was in conflict with the already existing security mode configuration. |
| Condition Violation For Guaranteed | The action was not performed due to condition violation for |
| Bit Rate | guaranteed bit rate. |
| Condition Violation For SDU | The action was not performed due to condition violation for |
| Parameters | SDU parameters. |
| Condition Violation For Traffic | The action was not performed due to condition violation for |
| Handling Priority | traffic handling priority. |
| Dedicated Assistance data Not | The action failed because RNC is not able to successfully |
| Available | deliver the requested dedicated assistance data to the UE. The reason for action is Directed Retry |
| Directed Retry Failure In The Radio Interface | Radio interface procedure has failed. |
| Procedure | radio interface procedure has falled. |
| Interaction With Other Procedure | Relocation was cancelled due to interaction with other |
| Invalid DAD ID | procedure. |
| Invalid RAB ID Invalid RAB Parameters | The action failed because the RAB ID is unknown in the RNC. |
| Combination | The action failed due to invalid RAB parameters combination. |
| Invalid RAB Parameters Value | The action failed due to invalid RAB parameters value. |
| Iu UP Failure | The action failed due to lu UP failure. |
| No remaining RAB | The reason for the action is no remaining RAB. |
| RAB Pre-empted | The reason for the action is that RAB is pre-empted. |
| Radio Connection With UE Lost | The action is requested due to losing radio connection to the |
| | UE |
| Release Due To UE Generated | Release requested due to UE generated signalling connection |
| Signalling Connection Release Release Due To UTRAN Generated | release. Release is initiated due to UTRAN generated reason. |
| Reason | Release is illitiated due to OTRAN generated reason. |
| Relocation Cancelled | The reason for the action is relocation cancellation. |
| Relocation Desirable for Radio | The reason for requesting relocation is radio related. |
| Reasons | |
| Relocation Failure In Target | Relocation failed due to a failure in target CN/RNC or target |
| CN/RNC Or Target System | system. |
| Relocation Not Supported In Target RNC Or Target System | Relocation failed because relocation was not supported in |
| Relocation Target not allowed | target RNC or target system. Relocation to the indicated target cell is not allowed for the UE |
| relocation ranger not allowed | in question. |
| Relocation Triggered | The action failed due to relocation. |
| Repeated Integrity Checking Failure | The action is requested due to repeated failure in integrity |
| | checking. |
| Request Superseded | The action failed because there was a second request on the |
| Doguested Ciphering And/Or | same RAB. The UTRAN or the UE is unable to support the requested |
| Requested Ciphering And/Or Integrity Protection Algorithms Not | ciphering and/or integrity protection algorithms. |
| Supported | ciphening and/or integrity protection algorithms. |
| Requested Guaranteed Bit Rate For | The action failed because requested guaranteed bit rate for |
| DL Not Available | DL is not available. |
| Requested Guaranteed Bit Rate For | The action failed because requested guaranteed bit rate for |
| UL Not Available Requested Guaranteed Bit Rate Not | UL is not available. |
| Requested Guaranteed Bit Rate Not Available | The action failed because requested guaranteed bit rate is not available. |
| Requested Information Not | The action failed because requested information is not |
| Available | available. |
| Requested Maximum Bit Rate For | The action failed because requested maximum bit rate for DL |
| DL Not Available | is not available. |
| Requested Maximum Bit Rate For | The action failed because requested maximum bit rate for UL |
| UL Not Available | is not available. |
| Requested Maximum Bit Rate Not Available | The action failed because requested maximum bit rate is not available. |
| Requested Request Type Not | The RNC is not supporting the requested location request |
| Supported | type either because it doesn't support the requested event or |
| | it doesn't support the requested report area. |
| Location Reporting Congestion | The action was not performed due to an inability to support |
| | location reporting caused by overload. |

| Requested Traffic Class Not Available Requested Transfer Delay Not Achievable Resource Optimisation Relocation Successful Relocation Time Critical Relocation Toueuing Expiry Treason for requested for time critical reason. The action failed because requested transfer delay is not achievable. The reason for requesting relocation is resource optimisation. The reason for the action is completion of successful relocation. The action failed due to expiry of the timer Tqueuing. Relocation Resource Allocation procedure failed due to expiry of the timer Treason for the action is expiry of timer Treason for th |
|--|
| Requested Transfer Delay Not Achievable Resource Optimisation Relocation The reason for requesting relocation is resource optimisation. The reason for the action is completion of successful relocation. Time Critical Relocation Relocation is requested for time critical reason. Tqueuing Expiry The action failed due to expiry of the timer Tqueuing. Relocation Resource Allocation procedure failed due to expiry of the timer Trelocation procedure failed due to expiry of the timer Trelocation. Trelocomplete Expiry The reason for the action is expiry of timer Trelocomplete. Trelocoveral Expiry The reason for the action is expiry of timer Trelocoveral. Relocation Preparation procedure is cancelled when timer |
| Achievable achievable. Resource Optimisation Relocation The reason for requesting relocation is resource optimisation. Successful Relocation The reason for the action is completion of successful relocation. Time Critical Relocation Relocation is requested for time critical reason. Touculing Expiry The action failed due to expiry of the timer Touculing. Relocation Resource Allocation procedure failed due to expiry of the timer Trelocation procedure failed due to expiry of the timer Trelocation. Trelocomplete Expiry The reason for the action is expiry of timer Trelocomplete. Trelocoveral Expiry The reason for the action is expiry of timer Trelocoveral. Relocation Preparation procedure is cancelled when timer |
| Resource Optimisation Relocation The reason for requesting relocation is resource optimisation. The reason for the action is completion of successful relocation. Time Critical Relocation Relocation is requested for time critical reason. Toueuing Expiry The action failed due to expiry of the timer Toueuing. Relocation Resource Allocation procedure failed due to expiry of the timer Trelocation procedure failed due to expiry of the timer Trelocation. Trelocomplete Expiry The reason for the action is expiry of timer Trelocomplete. Trelocoveral Expiry The reason for the action is expiry of timer Trelocoveral. Relocation Preparation procedure is cancelled when timer |
| Successful Relocation The reason for the action is completion of successful relocation. Time Critical Relocation Relocation is requested for time critical reason. Tqueuing Expiry The action failed due to expiry of the timer Tqueuing. Relocation Resource Allocation procedure failed due to expiry of the timer TRELOCalloc. TRELOCcomplete Expiry The reason for the action is expiry of timer TRELOCcomplete. TRELOCoverall Expiry The reason for the action is expiry of timer TRELOCoverall. Relocation Preparation procedure is cancelled when timer |
| relocation. Time Critical Relocation Relocation is requested for time critical reason. Tqueuing Expiry The action failed due to expiry of the timer Tqueuing. Relocation Resource Allocation procedure failed due to expiry of the timer TRELOCalloc TRELOCcomplete Expiry The reason for the action is expiry of timer TRELOCcomplete. TRELOCoverall Expiry The reason for the action is expiry of timer TRELOCoverall. TRELOCprep Expiry Relocation Preparation procedure is cancelled when timer |
| Time Critical Relocation Relocation is requested for time critical reason. Tqueuing Expiry The action failed due to expiry of the timer Tqueuing. Relocation Resource Allocation procedure failed due to expiry of the timer TRELOCalloc. TRELOCcomplete Expiry The reason for the action is expiry of timer TRELOCcomplete. TRELOCoverall Expiry The reason for the action is expiry of timer TRELOCoverall. TRELOCprep Expiry Relocation Preparation procedure is cancelled when timer |
| Trelocomplete Expiry Trelocomp |
| Trelocation Expiry Relocation Resource Allocation procedure failed due to expiry of the timer Trelocalloc. Trelocomplete Expiry Trelocoverall Expiry Trelocoverall Expiry Trelocoverall Expiry Trelocoverall |
| of the timer T _{RELOCalloc} . T _{RELOCcomplete} Expiry The reason for the action is expiry of timer T _{RELOCcomplete} . T _{RELOCoverall} Expiry The reason for the action is expiry of timer T _{RELOCoverall} . T _{RELOCprep} Expiry Relocation Preparation procedure is cancelled when timer |
| Trelocomplete Expiry The reason for the action is expiry of timer Trelocomplete. Trelocoverall Expiry Trelocoveral |
| TreloCoverall Expiry The reason for the action is expiry of timer Trelocoverall. TreloCoverall Expiry Relocation Preparation procedure is cancelled when timer |
| T _{RELOCprep} Expiry Relocation Preparation procedure is cancelled when timer |
| |
| |
| Trelocprep expires. |
| Unable To Establish During RAB failed to establish during relocation because it cannot be |
| Relocation supported in the target RNC. |
| Unknown Target RNC Relocation rejected because the target RNC is not known to |
| the CN. |
| User Inactivity The action is requested due to user inactivity. |
| User Plane Versions Not Supported The action failed because requested user plane versions were |
| not supported. |
| RNC unable to establish all RFCs RNC couldn't establish all RAB subflow combinations |
| indicated within the RAB Parameters IE. |

Lots of unaffected parts in 9.2.1.4 not shown

9.2.1.16 Request Type

This element indicates the type of UE location to be reported from RNC and it is either a Service Area or Geographical Area.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|------------------------------|---|-------|---|--|
| Request Type | | | | |
| >Event | M | | ENUMERATED(Stop Change of service area, Direct, Change of service area, , Stop Direct) | |
| >Report Area | M | | ENUMERATED(Service Area, Geographical Area,) | When the Event IE is set to "Stop Change of service area" or to "Stop Direct", the value of the Report area IE shall be the same as in the LOCATION REPORTING CONTROL message that initiated the location reporting. |
| >Horizontal Accuracy Code | 0 | | INTEGER(0127) | The requested accuracy "r" is derived from the "accuracy code" k by $r = 10x(1.1^k-1)$ |
| >Vertical Accuracy Code | 0 | | INTEGER(0127) | The requested accuracy "v" is derived from the "accuracy code" k by v = 45x(1.025 ^k -1). |
| >Response time | C – IfDirect&G eoAreaRep ortArea | | ENUMERATED (Low Delay, Delay Tolerant,) | |
| >Positioning Priority | C – ifDirect&Ch angeArea | | ENUMERATED(High Priority, Normal Priority,) | |
| >Client type | C – ifDirect | | ENUMERATED(Emergency Services, Value Added Services, PLMN Operator Services, Lawful Intercept Services,, PLMN Operator - broadcast services, PLMN Operator - O&M, PLMN Operator - anonymous statistics, PLMN Operator - Target MS service support) | Identifies the type of client |

| Condition | Explanation |
|----------------------------|---|
| IfDirect&GeoAreaReportArea | This IE shall be present if the <i>Event</i> IE is set to 'Direct' and the |
| | Report Area IE is set to 'Geographical Area'. |
| IfDirect | This IE shall be present if the <i>Event</i> IE is set to 'Direct'. |
| IfDirect&ChangeArea | This IE shall be present if the <i>Event</i> IE is set to 'Direct' or "Change of Service Area". |

9.3.4 Information Element Definitions

Lots of unaffected ASN1 in 9.3.4 not shown

```
CauseRadioNetwork ::= INTEGER {
   rab-pre-empted (1),
   trelocoverall-expiry (2),
    trelocprep-expiry (3),
    treloccomplete-expiry (4),
    tqueing-expiry (5),
   relocation-triggered (6),
    trellocalloc-expiry(7),
    unable-to-establish-during-relocation (8),
   unknown-target-rnc (9),
   relocation-cancelled (10),
    successful-relocation (11),
    requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
    conflict-with-already-existing-integrity-protection-and-or-ciphering-information (13),
    failure-in-the-radio-interface-procedure (14),
    release-due-to-utran-generated-reason (15),
    user-inactivity (16),
    time-critical-relocation (17),
    requested-traffic-class-not-available (18),
    invalid-rab-parameters-value (19),
    requested-maximum-bit-rate-not-available (20),
    requested-guaranteed-bit-rate-not-available (21),
    requested-transfer-delay-not-achievable (22),
    invalid-rab-parameters-combination (23),
    condition-violation-for-sdu-parameters (24),
    condition-violation-for-traffic-handling-priority (25),
    condition-violation-for-guaranteed-bit-rate (26),
    user-plane-versions-not-supported (27),
    iu-up-failure (28),
   relocation-failure-in-target-CN-RNC-or-target-system(29),
   invalid-RAB-ID (30),
   no-remaining-rab (31),
    interaction-with-other-procedure (32),
```

```
requested-maximum-bit-rate-for-dl-not-available (33),
    requested-maximum-bit-rate-for-ul-not-available (34),
    requested-quaranteed-bit-rate-for-dl-not-available (35),
    requested-quaranteed-bit-rate-for-ul-not-available (36),
    repeated-integrity-checking-failure (37),
   requested-request-type-not-supported (38),
   request-superseded (39),
    release-due-to-UE-generated-signalling-connection-release (40),
   resource-optimisation-relocation (41),
    requested-information-not-available (42),
   relocation-desirable-for-radio-reasons (43),
   relocation-not-supported-in-target-RNC-or-target-system (44),
   directed-retry (45),
   radio-connection-with-UE-Lost (46),
    rNC-unable-to-establish-all-RFCs (47),
   deciphering-keys-not-available(48),
   dedicated-assistance-data-not-available(49),
   relocation-target-not-allowed (50),
   location-reporting-congestion (51)
} (1..64)
CauseNon-Standard ::= INTEGER (129..256)
CauseTransmissionNetwork ::= INTEGER {
    signalling-transport-resource-failure (65),
    iu-transport-connection-failed-to-establish (66)
} (65..80)
ClientType ::= ENUMERATED {
    emergency-Services,
   value-Added-Services,
   pLMN-Operator-Services,
    lawful-Intercept-Services,
   pLMN-Operator-Broadcast-Services,
   pLMN-Operator-O-et-M,
   pLMN-Operator-Anonymous-Statistics,
   pLMN-Operator-Target-MS-Service-Support
```

Lots of unaffected ASN1 in 9.3.4 not shown

3GPP TSG-RAN3 Meeting #31 Arlanda, Sweden, 19th – 23rd August 2002

| Arlanda | a, Sw | /eder | n, 19''' | – 23 rd A | ugust 20 | 02 | | | | | | | |
|--|---|-------|--------------------------------------|---|--|----------------|--|------|--|---|---------|--------------------------------------|--------|
| CHANGE REQUEST | | | | | | | | | | | | | |
| [#] 25.413 | | | 413 | CR | жrev | жrev - ж | | | Current version: 5.1.0 | | | Ж | |
| For <u>HELP</u> 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: | | ж | LCS a | lignment | with stage 2 | 2 | | | | | | | |
| Source: | rce: # RAN WG3 | | | | | | | | | | | | |
| Work ite | ет со | de:♯ | TEI4 | | | | | | Date: ♯ | 22/ | 08/20 | 02 | |
| Categor | y: | ¥ | Use one F (A (B (C (D (Detailed | correction) (correspond (addition of (functional (editorial m explanatio | ds to a corre feature), modification odification) | ction in an ea | | ease | Release: # Use <u>one</u> of 2) R96 R97 R98 R99 Rel-4 Rel-5 | the fo (GSN (Rele (Rele (Rele (Rele (Rele | - | e 2) 996) 997) 998) 999) | eases: |
| | | | | | | | | | Rel-6 | (Rele | ease 6) |) | |
| Reason | for cl | nange | | | | | | | S 22.071]/[TS oport over Iu | | | is wa | as |
| Summary of change: # | | | T In T bo | New LCS client types and indication of Congestion can also apply in UTRAN case according to actual LCS stage 1 and 2 specifications [TS 22.071]/[TS 23.271]. The Client Type IE in the Request Type Element of the Location Reporting Control message should allow additional Client Types to be specified (PLMN Operator - broadcast services, PLMN Operator - O&M, PLMN Operator - anonymous statistics, PLMN Operator - Target MS service support). The Cause IE in the Location Report message should allow the RAN to return an indication of Congestion. Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification (same release) because of completion/correction of the Iu LCS functionality. The CR has an impact under functional and protocol point of view. The impact can be considered isolated because the change affects the Location Report function. | | | | | | | | | |
| Consequence not appr | RANAP LCS functionality will not be aligned with LCS stage 2 and then will not for what was expected from it i.e. those client types and indication of congestion would be supported in Rel4. | | | | | | | | | | | | |
| Clauses | affec | ted. | # 8 | 20 921 | 4. 9.2.1.16 | and 9 3 4 | | | | | | | |

Other specs

Y N

** Other core specifications

** CR071 29.010 REL-5 and REL-4

| affected: | X Test specifications O&M Specifications | CR512 25.413 REL-4 |
|-----------------|--|--------------------|
| 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.

8.20 Location Report

8.20.1 General

The purpose of the Location Report procedure is to provide the UE's location information to the CN. The procedure uses connection oriented signalling.

8.20.2 Successful Operation

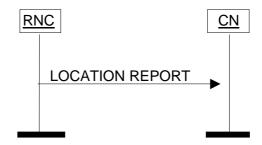


Figure 22: Location Report procedure. Successful operation.

The serving RNC shall initiate the procedure by generating a LOCATION REPORT message. The LOCATION REPORT message may be used as a response for the LOCATION REPORTING CONTROL message. Also, when a user enters or leaves a classified zone set by O&M, e.g. zone where a disaster occurred, a LOCATION REPORT message shall be sent to the CN including the Service Area of the UE in the *Area Identity* IE. The *Cause* IE shall indicate the appropriate cause value to CN, e.g. "User Restriction Start Indication" and "User Restriction End Indication". The CN shall react to the LOCATION REPORT message with CN vendor specific actions.

For this procedure, only Service Areas that are defined for the PS and CS domains shall be considered.

In case reporting at change of Service Area is requested by the CN, then the RNC shall issue a LOCATION REPORT message.

- whenever the information given in the previous LOCATION REPORT message or INITIAL UE MESSAGE message is not anymore valid.
- upon receipt of the first LOCATION REPORTING CONTROL message following a Relocation Resource Allocation procedure, with *Request Type* IE set to "Change of Service Area", as soon as SAI becomes available in the new SRNC and the relocation procedure has been successfully completed.

In the case when Service Area is reported, the RNC shall include to the LOCATION REPORT message in the *Area Identity* IE the Service Area, which includes at least one of the cells from which the UE is consuming radio resources.

In the case when the LOCATION REPORT message is sent as an answer to a request for a direct report or at a change of Service Area, the *Request Type* IE from the LOCATION REPORTING CONTROL message shall be included.

If the LOCATION REPORT message is sent as an answer to a request for a direct report of Service Area and the current Service Area can not be determined by the RNC, then the *Area Identity* IE shall be omitted and a cause value shall be included to indicate that the request could not be fulfilled, e.g. "Requested Information Not Available" or "Location Reporting Congestion". The RNC may also include the *Last Known Service Area* IE.

If the RNC can not deliver the location information as requested by the CN, due to either the non-support of the requested event or the non-support of the requested report area or if RNC is currently not able to reach the UE, the RNC shall indicate the UE location to be "Undetermined" by omitting the *Area Identity* IE. A cause value shall instead be added to indicate the reason for the undetermined location, e.g. "Requested Request Type not supported" or "Location Reporting Congestion".

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request to report a geographical area with a specific accuracy, the LOCATION REPORT message shall include the *Geographical Area* IE within the *Area Identity* IE containing either a point with indicated uncertainty or a polygon or an other type, which fulfils the requested accuracy as accurately as possible. If, on the other hand, no specific accuracy level was requested in the LOCATION REPORTING CONTROL message, the LOCATION REPORT message shall

include the $Geographical\ Area\ IE$ within the $Area\ Identity\ IE$, the reported $Geographical\ Area\ IE$ may include an accuracy.

8.20.3 Abnormal Conditions

Not applicable.

9.2.1.4 Cause

The purpose of the *Cause* IE is to indicate the reason for a particular event for the RANAP protocol.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|-------------------------------|----------|-------|--|------------------------|
| Choice Cause | | | | |
| >Radio Network Layer Cause | | | INTEGER (RAB pre- empted(1), | Value range is 1 – 64. |
| | | | Trelocoverall Expiry(2), | |
| | | | Trelocprep Expiry(3), | |
| | | | Treloccomplete Expiry(4), | |
| | | | Tqueing Expiry(5), | |
| | | | Relocation Triggered(6), | |
| | | | Unable to Establish During Relocation(8), | |
| | | | Unknown Target RNC(9), | |
| | | | Relocation Cancelled(10), | |
| | | | Successful Relocation(11), | |
| | | | Requested Ciphering and/or Integrity Protection Algorithms not Supported(12), | |
| | | | Conflict with already existing Integrity protection and/or Ciphering information (13), | |
| | | | Failure in the Radio Interface Procedure(14), | |
| | | | Release due to UTRAN Generated Reason(15), | |
| | | | User Inactivity(16), | |
| | | | Time Critical Relocation(17), | |
| | | | Requested Traffic Class not Available(18), | |
| | | | Invalid RAB Parameters Value(19), | |
| | | | Requested Maximum Bit Rate | |

| IE/Group Name | Presence | Range | IE type and | Semantics description |
|---------------|----------|-------|---|-----------------------|
| Choice Cause | | | reference | |
| | | | not Available(20), | |
| | | | Requested Maximum Bit Rate for DL not Available(33), | |
| | | | Requested Maximum Bit Rate for UL not Available(34), | |
| | | | Requested Guaranteed Bit Rate not Available(21), | |
| | | | Requested Guaranteed Bit Rate for DL not Available(35), | |
| | | | Requested Guaranteed Bit Rate for UL not Available(36), | |
| | | | Requested Transfer Delay not Achievable(22), | |
| | | | Invalid RAB Parameters Combination(23), | |
| | | | Condition Violation for SDU Parameters(24), | |
| | | | Condition Violation for Traffic Handling Priority(25), | |
| | | | Condition Violation for Guaranteed Bit Rate(26), | |
| | | | User Plane Versions not Supported(27), | |
| | | | lu UP Failure(28), | |
| | | | TRELOCalloc Expiry (7), | |
| | | | Relocation Failure in Target CN/RNC or Target System (29), | |
| | | | Invalid RAB ID(30), | |
| | | | No remaining RAB(31), | |

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|---------------|----------|-------|---------------------------------------|-----------------------|
| Choice Cause | | | reference | |
| | | | Interaction with | |
| | | | other procedure(32), | |
| | | | | |
| | | | Repeated Integrity Checking | |
| | | | Failure(37), | |
| | | | Requested | |
| | | | Request Type not | |
| | | | supported(38), | |
| | | | Request | |
| | | | superseded(39), | |
| | | | Release due to | |
| | | | UE generated signalling | |
| | | | connection | |
| | | | release(40), | |
| | | | Resource | |
| | | | Optimisation Relocation(41), | |
| | | | | |
| | | | Requested Information Not | |
| | | | Available(42), | |
| | | | Relocation | |
| | | | desirable for radio | |
| | | | reasons (43), | |
| | | | Relocation not | |
| | | | supported in Target RNC or | |
| | | | Target | |
| | | | system(44), | |
| | | | Directed Retry | |
| | | | (45), | |
| | | | Radio Connection | |
| | | | With UE Lost(46) | |
| | | | , | |
| | | | RNC unable to | |
| | | | establish all RFCs | |
| | | | (47) , | |
| | | | Deciphering Keys | |
| | | | Not Available(48), | |
| | | | Dedicated | |
| | | | Assistance data Not Available(49), | |
| | | | Relocation Target | |
| | | | not allowed(50), | |
| | | | <u>Location</u> | |
| | | | Reporting | |
| | | | Congestion(51), | |
| | | | Reduce Load in | |
| | | | Serving Cell | |
| | | | (51 <u>52</u>), | |

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|---------------|----------|-------|---|-----------------------|
| Choice Cause | | | | |
| | | | No Radio Resources Available in Target cell (\$253)) | |

Lots of unaffected parts in 9.2.1.4 not shown

The meaning of the different cause values is described in the following table. In general, "not supported" cause values indicate that the concerning capability is missing. On the other hand, "not available" cause values indicate that the concerning capability is present, but insufficient resources were available to perform the requested action.

| D. P. N. C. L. L. | |
|--|--|
| Radio Network Layer cause | Meaning |
| Deciphering Keys Not Available | The action failed because RNC is not able to provide requested deciphering keys. |
| Conflict with already existing | The action was not performed due to that the requested |
| Integrity protection and/or Ciphering | security mode configuration was in conflict with the already |
| information | existing security mode configuration. |
| Condition Violation For Guaranteed | The action was not performed due to condition violation for |
| Bit Rate | guaranteed bit rate. |
| Condition Violation For SDU | The action was not performed due to condition violation for |
| Parameters | SDU parameters. |
| Condition Violation For Traffic | The action was not performed due to condition violation for |
| | traffic handling priority. |
| Handling Priority Dedicated Assistance data Not | The action failed because DNC is not able to acceptable |
| | The action failed because RNC is not able to successfully |
| Available | deliver the requested dedicated assistance data to the UE. |
| Directed Retry | The reason for action is Directed Retry |
| Failure In The Radio Interface | Radio interface procedure has failed. |
| Procedure | Delegation was a smalled due to interesting with attent |
| Interaction With Other Procedure | Relocation was cancelled due to interaction with other |
| | procedure. |
| Invalid RAB ID | The action failed because the RAB ID is unknown in the RNC. |
| Invalid RAB Parameters | The action failed due to invalid RAB parameters combination. |
| Combination | |
| Invalid RAB Parameters Value | The action failed due to invalid RAB parameters value. |
| Iu UP Failure | The action failed due to lu UP failure. |
| No remaining RAB | The reason for the action is no remaining RAB. |
| RAB Pre-empted | The reason for the action is that RAB is pre-empted. |
| Radio Connection With UE Lost | The action is requested due to losing radio connection to the |
| | UE |
| Release Due To UE Generated | Release requested due to UE generated signalling connection |
| Signalling Connection Release | release. |
| Release Due To UTRAN Generated | Release is initiated due to UTRAN generated reason. |
| Reason | S |
| Relocation Cancelled | The reason for the action is relocation cancellation. |
| Relocation Desirable for Radio | The reason for requesting relocation is radio related. |
| Reasons | g |
| Relocation Failure In Target | Relocation failed due to a failure in target CN/RNC or target |
| CN/RNC Or Target System | system. |
| Relocation Not Supported In Target | Relocation failed because relocation was not supported in |
| RNC Or Target System | target RNC or target system. |
| Relocation Target not allowed | Relocation to the indicated target cell is not allowed for the UE |
| 3 | in question. |
| Relocation Triggered | The action failed due to relocation. |
| Repeated Integrity Checking Failure | The action is requested due to repeated failure in integrity |
| Tropodiod intogrity Officiality Fallaro | checking. |
| Request Superseded | The action failed because there was a second request on the |
| Request Superiodada | same RAB. |
| Requested Ciphering And/Or | The UTRAN or the UE is unable to support the requested |
| Integrity Protection Algorithms Not | ciphering and/or integrity protection algorithms. |
| Supported | opnoming and/or integrity protection algorithms. |
| Requested Guaranteed Bit Rate For | The action failed because requested guaranteed bit rate for |
| DL Not Available | DL is not available. |
| Requested Guaranteed Bit Rate For | The action failed because requested guaranteed bit rate for |
| UL Not Available | UL is not available. |
| Requested Guaranteed Bit Rate Not | The action failed because requested guaranteed bit rate is not |
| Available | available. |
| Requested Information Not | The action failed because requested information is not |
| Available | available. |
| Requested Maximum Bit Rate For | The action failed because requested maximum bit rate for DL |
| DL Not Available | is not available. |
| Requested Maximum Bit Rate For | The action failed because requested maximum bit rate for UL |
| | · · · · · · · · · · · · · · · · · · · |
| UL Not Available Requested Maximum Bit Rate Not | is not available. |
| | The action failed because requested maximum bit rate is not |
| Available Requested Request Type Not | available. |
| Requested Request Type Not | The RNC is not supporting the requested location request |
| Supported | type either because it doesn't support the requested event or |
| Location Departing Congretion | it doesn't support the requested report area. |
| Location Reporting Congestion | The action was not performed due to an inability to support |
| | location reporting caused by overload. |

| Requested Traffic Class Not | The action failed because requested traffic class is not |
|-----------------------------------|---|
| Available | available. |
| Requested Transfer Delay Not | The action failed because requested transfer delay is not |
| Achievable | achievable. |
| Resource Optimisation Relocation | The reason for requesting relocation is resource optimisation. |
| Successful Relocation | The reason for the action is completion of successful relocation. |
| Time Critical Relocation | Relocation is requested for time critical reason. |
| T _{QUEUING} Expiry | The action failed due to expiry of the timer TQUEUING. |
| T _{RELOCalloc} Expiry | Relocation Resource Allocation procedure failed due to expiry |
| | of the timer T _{RELOCalloc} . |
| T _{RELOCcomplete} Expiry | The reason for the action is expiry of timer Treloccomplete. |
| T _{RELOCoverall} Expiry | The reason for the action is expiry of timer T _{RELOCoverall} . |
| T _{RELOCprep} Expiry | Relocation Preparation procedure is cancelled when timer |
| | T _{RELOCprep} expires. |
| Unable To Establish During | RAB failed to establish during relocation because it cannot be |
| Relocation | supported in the target RNC. |
| Unknown Target RNC | Relocation rejected because the target RNC is not known to |
| | the CN. |
| User Inactivity | The action is requested due to user inactivity. |
| User Plane Versions Not Supported | The action failed because requested user plane versions were not supported. |
| RNC unable to establish all RFCs | RNC couldn't establish all RAB subflow combinations |
| | indicated within the RAB Parameters IE. |
| Reduce Load in Serving Cell | Load on serving cell needs to be reduced. |
| No Radio Resources Available in | Load on target cell is too high. |
| Target Cell | |

Lots of unaffected parts in 9.2.1.4 not shown

9.2.1.16 Request Type

This element indicates the type of UE location to be reported from RNC and it is either a Service Area or Geographical Area.

| IE/Group Name | Presence | Range | IE type and reference | Semantics description |
|------------------------------|---|-------|---|--|
| Request Type | | | | |
| >Event | M | | ENUMERATED(Stop Change of service area, Direct, Change of service area, , Stop Direct) | |
| >Report Area | М | | ENUMERATED(Service Area, Geographical Area,) | When the Event IE is set to "Stop Change of service area" or to "Stop Direct", the value of the Report area IE shall be the same as in the LOCATION REPORTING CONTROL message that initiated the location reporting. |
| >Horizontal Accuracy Code | 0 | | INTEGER(0127) | The requested accuracy "r" is derived from the "accuracy code" k by $r = 10x(1.1^k-1)$ |
| >Vertical Accuracy Code | 0 | | INTEGER(0127) | The requested accuracy "v" is derived from the "accuracy code" k by v = 45x(1.025 ^k -1). |
| >Response time | C – IfDirect&G eoAreaRep ortArea | | ENUMERATED (Low Delay, Delay Tolerant,) | |
| >Positioning Priority | C – ifDirect&Ch angeArea | | ENUMERATED(High Priority, Normal Priority,) | |
| >Client type | C – ifDirect | | ENUMERATED(Emergency Services, Value Added Services, PLMN Operator Services, Lawful Intercept Services,, PLMN Operator - broadcast services, PLMN Operator - O&M, PLMN Operator - anonymous statistics, PLMN Operator - Target MS service support) | Identifies the type of client |

| Condition | Explanation |
|----------------------------|---|
| IfDirect&GeoAreaReportArea | This IE shall be present if the <i>Event</i> IE is set to 'Direct' and the |
| | Report Area IE is set to 'Geographical Area'. |
| IfDirect | This IE shall be present if the <i>Event</i> IE is set to 'Direct'. |
| IfDirect&ChangeArea | This IE shall be present if the <i>Event</i> IE is set to 'Direct' or "Change of Service Area". |

9.3.4 Information Element Definitions

Lots of unaffected ASN1 in 9.3.4 not shown

```
CauseRadioNetwork ::= INTEGER {
   rab-pre-empted (1),
   trelocoverall-expiry (2),
    trelocprep-expiry (3),
    treloccomplete-expiry (4),
    tqueing-expiry (5),
   relocation-triggered (6),
    trellocalloc-expiry(7),
    unable-to-establish-during-relocation (8),
   unknown-target-rnc (9),
   relocation-cancelled (10),
    successful-relocation (11),
    requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
    conflict-with-already-existing-integrity-protection-and-or-ciphering-information (13),
    failure-in-the-radio-interface-procedure (14),
    release-due-to-utran-generated-reason (15),
    user-inactivity (16),
    time-critical-relocation (17),
    requested-traffic-class-not-available (18),
    invalid-rab-parameters-value (19),
    requested-maximum-bit-rate-not-available (20),
    requested-guaranteed-bit-rate-not-available (21),
    requested-transfer-delay-not-achievable (22),
    invalid-rab-parameters-combination (23),
    condition-violation-for-sdu-parameters (24),
    condition-violation-for-traffic-handling-priority (25),
    condition-violation-for-guaranteed-bit-rate (26),
    user-plane-versions-not-supported (27),
    iu-up-failure (28),
   relocation-failure-in-target-CN-RNC-or-target-system(29),
   invalid-RAB-ID (30),
   no-remaining-rab (31),
    interaction-with-other-procedure (32),
```

```
requested-maximum-bit-rate-for-dl-not-available (33),
    requested-maximum-bit-rate-for-ul-not-available (34),
    requested-quaranteed-bit-rate-for-dl-not-available (35),
    requested-quaranteed-bit-rate-for-ul-not-available (36),
    repeated-integrity-checking-failure (37),
    requested-request-type-not-supported (38),
    request-superseded (39),
    release-due-to-UE-generated-signalling-connection-release (40),
    resource-optimisation-relocation (41),
    requested-information-not-available (42),
    relocation-desirable-for-radio-reasons (43),
    relocation-not-supported-in-target-RNC-or-target-system (44),
    directed-retry (45),
    radio-connection-with-UE-Lost (46),
    rNC-unable-to-establish-all-RFCs (47),
   deciphering-keys-not-available(48),
    dedicated-assistance-data-not-available(49),
   relocation-target-not-allowed (50),
   location-reporting-congestion (51),
   reduce-load-in-serving-cell (5152),
   no-radio-resources-available-in-target-cell (5253)
} (1..64)
CauseNon-Standard ::= INTEGER (129..256)
CauseTransmissionNetwork ::= INTEGER {
    signalling-transport-resource-failure (65),
    iu-transport-connection-failed-to-establish (66)
} (65..80)
CellCapacityClass ::= INTEGER (1..100)
CellLoad
            ::= INTEGER (0..100)
CellLoadInformation ::= SEOUENCE {
   cellCapacityClass
                                CellCapacityClass,
   cellLoad
                                CellLoad,
   realTimeLoad
                                RealTimeLoad
                                                                    OPTIONAL,
   nonRealTimeLoadInformation NonRealTimeLoadInformation
                                                                    OPTIONAL,
   iE-Extensions
                                ProtocolExtensionContainer { { CellLoadInformation-ExtIEs } }
                                                                                                  OPTIONAL,
CellLoadInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    . . .
ClientType ::= ENUMERATED {
    emergency-Services,
   value-Added-Services,
   pLMN-Operator-Services,
   lawful-Intercept-Services,
```

```
pLMN-Operator-Broadcast-Services,
pLMN-Operator-O-et-M,
pLMN-Operator-Anonymous-Statistics,
pLMN-Operator-Target-MS-Service-Support
```

Lots of unaffected ASN1 in 9.3.4 not shown