

3GPP TSG CN WG4 Meeting #13
Fort Lauderdale, US, 8th April – 12th April 2002

N4-020517

Title: Liaison Statement on Mandatory Use Of Transport Addresses sent by the MSC in a RAB Modification Request
Source: CN4
To: RAN WG3, TSG SA, TSG RAN
Cc:
Response to: LS ***TSGR3#27(02) 0610*** (N4-020427) on Mandatory Use Of Transport Addresses sent by the MSC in a RAB Modification Request from RAN3.

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Attachments: N4-020427 (incoming LS from RAN3)

1. Overall Description:

CN4 thanks RAN3 for their LS and also for agreeing to implement the requested changes to RANAP to always modify the lu bearer in accordance to the Transport Addresses sent by the MSC, for Rel5. The solution however is still a problem for earlier releases and CN4 considers that the handling of the transport addresses by RAN3 in this way is actually a fault and therefore merits essential correction.

The scenarios are outlined in a table below however the basic problem is that the lu bearer (between UTRAN & MSC MGW) should be controlled by the MSC. If the MSC wishes to modify the RAB characteristics but maintain the Core Network bandwidth and transport connection this control must be within the MSC as the UTRAN cannot know what services are running and therefore how its decisions will affect these services.

The following table describes the current Release 4 situation – taking into account the CRs made in Rel4 for MSC and MGW H.248 package to indicate support of MSLC or not for the lu bearer link. It further includes the interworking with a Rel5 UTRAN when the aforementioned CR in RANAP is implemented.

	REL 4 MSC MGW does not support MSLC.	REL4 MSC/ MGW does support MSLC.
REL99 UTRAN - this is prior to AAL2 CS2 or IP bearer and thus no modification of transport link within same addresses is possible	MSC gets informed that MSLC is not supported as MGW does not support MSLC. MSC reserves new terminations and provides them as transport address in RAB Assign Modification. UTRAN is permitted to ignore addresses and not modify bearer. It is assumed that this would only happen when the bandwidth requirement is less than currently established. MSC currently assumes that the bearer is modified to the new terminations and deletes the old terminations. <u>This would in fact release the bearer unintentionally if the UTRAN had not modified to the</u>	MSC gets informed that MSLC is not supported as MGW does not receive MSLC support in ERQ from UTRAN. MSC reserves new terminations and sends them to UTRAN in RAB Assign Modification. UTRAN is permitted to ignore addresses and not modify bearer. It is assumed that this would only happen when the bandwidth requirement is less than currently established. MSC currently assumes that the bearer is modified to the new terminations and deletes the old terminations. <u>This would in fact release the bearer unintentionally if the UTRAN had not modified to the new</u>

<p>REL 4 UTRAN MSLC not supported</p>	<p><u>new transport address.</u> Same as above case.</p>	<p><u>transport address.</u> Same as above case as MGW does not receive MSLC support in ERQ from RNC.</p>
<p>REL4 UTRAN MSLC is supported.</p>	<p>Same as above.</p>	<p>MSC receives an indication that MSLC is support ed for the link. MSC does not reserve new terminations and sends RAB Assign Modification without transport addresses. UTRAN performs modification of link characteristics as requested. UTRAN may decide not to modify link characteristics ? It is assumed that this would only happen when bandwidth requirement is less than currently established. MSC assumes lu bearer has been modified to the link characteristics indicated in the RAB Assignment Modification. <u>If this is not the case problems may arise depending on the service using this lu Bearer.</u></p>
<p>REL5 UTRAN MSLC not supported (RANAP updated to mandate use of transport address)</p>	<p>MSC gets informed that MSLC is not supported as MGW does not support MSLC. MSC reserves new terminations and sends them to UTRAN in RAB Assign Modification. UTRAN modifies connection to new terminations. MSC deletes the old terminations. <u>No incompatibilities.</u></p>	<p>Same as previous case as MGW does not receive MSLC support in ERQ from RNC.</p>
<p>REL5 UTRAN MSLC supported (RANAP updated to mandate use of transport address)</p>	<p>Same as above.</p>	<p>MSC receives an indication that MSLC is support ed for the link. MSC does not reserve new terminations and sends RAB Assign Modification without new transport address. UTRAN performs modification of link characteristics as requested. UTRAN may NOTdecide not to modify link characteristics ? This is desired case but it seems not to have been covered in the CR for RANAP Rel5 – would appear to still need to be changed.</p>

As can be seen from the table the CR agreed by RAN3 solves the problem for a Release 4 (and onward) core network when REL5 UTRAN is used. However if REL4 or R99 UTRAN is used there is still a fault that requires an essential correction in either CN or UTRAN. If the problem is resolved in CN then for all UTRAN (even after Rel5) when MSLC is not supported by both transport entities the MSC will have to perform the very inefficient and messy solution to check if the new terminations are not used before deleting the old ones.

In CN4's opinion the CR should be in RAN as this problem is seen as a fault in the RANAP protocol as it currently gives the UTRAN a flexibility that it should not have; solving this in CN will still allow the UTRAN to decide not to modify the bearer when the CN expects it to be modified. CN4 asks RAN3 what the reasoning would be for having such flexibility in the UTRAN; is this something that was infact required as part of the system architecture requirements ?

2. Actions:

To RAN3 group.

ACTION: CN4 asks RAN3 group to reconsider the agreed CR for application to R99 and Rel4. Also to consider the case where no transport addresses are sent (i.e. MSLC supported) – the RNC should still modify the link characteristics to match those defined by the RAB parameters included in the RANAP message from the MSC.

To TSG RAN and TSG SA group.

ACTION: CN4 asks RAN and SA group to consider how to proceed if RAN WG3 cannot accept CN4's request to agree the CR for application to R99 & REL4.

3. Date of Next CN4 Meetings:

CN4 #14	13th – 17th May 2002	Budapest, HUNGARY
CN4 #15	29th July – 2nd Aug. 2002	Helsinki, FINLAND

TSG-RAN Working Group 3
Orlando, USA, 18th – 22th February 2002

TSGR3#27(02) 0610

Title: Mandatory use of Transport Addresses sent by the MSC in a RAB Modification Request
Source: RAN3
To: CN4
Cc: TSG-SA2
Response to: LS N4#12(02) 0220 on Liaison Statement on RANAP Indication Of Modify Support Of Link Characteristics

Contact Person:

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Attachments:

1. Overall Description:

RAN3 thanks CN4 for their liaison on “RANAP Indication Of Modify Support Of Link Characteristics” (CN4#12- see reference above) requesting to mandate the RNC to use the transport layer addresses when they are provided by the MSC in a RAB Modification Request.

RAN3 would like to inform CN4 that after lengthy discussions, it came to the following conclusions:

1. the use of these addresses is currently optional since the RNC can decide to keep using the existing bearer even when addresses are provided.
2. the RAB modification works with this current behaviour described today in RANAP, however RAN3 recognized the concern of CN4 that it might not be optimised on the CN side in a few cases when the MSLC functionality is not supported and the CN reserves some resources for a short while that might eventually not be used,
3. the optimisation requested by CN4 introduces however a new behaviour on the RNC side which is not backwards compatible and could only be agreed from release 5 onwards.

2. Actions:

No action.

3. Date of Next RAN3 Meetings:

RAN3#28 8th – 12th April 2002 Kobe, Japan
RAN3#29 13th – 17th Mai 2002 xxx, Korea

CHANGE REQUEST

⌘ **25.413 CR 409** ⌘ rev **2** ⌘ Current version: **4.3.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Transport Layer Address at RAB modification		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 2002-02-13
Category:	⌘ C	Release:	⌘ REL-5
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change: ⌘ The procedure text relating to the handling of RAB modifications currently allows the RNC to decide whether to make use of provided Transport Layer Information or not. The current text does not provide a clear and predictable behaviour, and this was pointed out in a liaison from CN4. The liaison asked RAN3 to clarify the behaviour by mandating the RNC to make use of provided Transport Layer Information.

Summary of change: ⌘ The RNC shall during RAB modification make use of the new Transport Layer Information if provided.

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 since the current optionality in the RNC is restricted in order to have a clear behaviour.

The impact can be considered isolated because it only affects RAB Modification. A CN implementing this change still has to be able to handle the case with the unpredictable R99/REL-4 behaviour.

Consequences if not approved: ⌘ The MSC doesn't know if the reserved Transport bearer termination will be used or not.

Clauses affected: ⌘ 8.2.2

Other specs affected: ⌘ Other core specifications ⌘ Test specifications O&M Specifications

Other comments: ☹

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2 RAB Assignment

8.2.1 General

The purpose of the RAB Assignment procedure is to establish new RABs and/or to enable modifications and/or releases of already established RABs for a given UE. The procedure uses connection oriented signalling.

8.2.2 Successful Operation

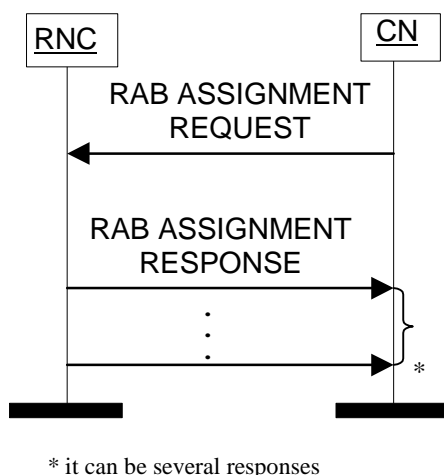


Figure 1: RAB Assignment procedure. Successful operation.

The CN shall initiate the procedure by sending a RAB ASSIGNMENT REQUEST message. When sending the RAB ASSIGNMENT REQUEST message, the CN shall start the $T_{RABAssgt}$ timer.

The CN may request UTRAN to:

- establish,
- modify,
- release

one or several RABs with one RAB ASSIGNMENT REQUEST message.

The CN shall include in the RAB ASSIGNMENT REQUEST message at least one request to either establish/modify or release a RAB.

The message shall contain the information required by the UTRAN to build the new RAB configuration, such as:

- list of RABs to establish or modify with their bearer characteristics;
- list of RABs to release.

For each RAB requested to establish, the message shall contain:

- RAB ID.
- NAS Synchronisation Indicator (only when available).
- RAB parameters (including e.g. Allocation/Retention Priority).
- User Plane Information (i.e required User Plane Mode and required UP Mode Versions).

- Transport Layer Information.
- PDP Type Information (only for PS)
- Data Volume Reporting Indication (only for PS).
- DL GTP-PDU sequence number (only when GTP-PDU sequence number is available in cases of handover from GPRS to UMTS or when establishing a RAB for an existing PDP context).
- UL GTP-PDU sequence number (only when GTP-PDU sequence number is available in cases of handover from GPRS to UMTS or when establishing a RAB for an existing PDP context).
- DL N-PDU sequence number (only when N-PDU sequence number is available in case of handover from GPRS to UMTS).
- UL N-PDU sequence number (only when N-PDU sequence number is available in case of handover from GPRS to UMTS).

For each RAB requested to modify, the message may contain:

- RAB ID (mandatory).
- NAS Synchronisation Indicator.
- RAB parameters.
- Transport Layer Information .
- User Plane Information.

The *Transport Layer Information* IE may only be present if at least one more IE than the *RAB ID* IE and the *NAS Synchronisation Indicator* IE is also included.

At a RAB modification, the *RAB parameter* IE and the *User Plane Information* IE shall be present in RAB ASSIGNMENT REQUEST message only when any previously set value is requested to be modified.

If, for a RAB requested to be modified, one (or more) of these IEs except *RAB ID* IE are not present in RAB ASSIGNMENT REQUEST message the RNC shall continue to use the value(s) currently in use for the not present IEs.

For each RAB request to release, the message shall contain:

- RAB ID.
- Cause.

Upon reception of the RAB ASSIGNMENT REQUEST message UTRAN shall execute the requested RAB configuration. The CN may indicate that RAB QoS negotiation is allowed for certain RAB parameters and in some cases also which alternative values to be used in the negotiation.

The same RAB ID shall only be present once in the whole RAB ASSIGNMENT REQUEST message.

The RAB ID shall identify uniquely the RAB for the specific CN domain for the particular UE, which makes the RAB ID unique over the Iu connection on which the RAB ASSIGNMENT REQUEST message is received. When a RAB ID already in use over that particular Iu instance is used, the procedure is considered as modification of that RAB.

The RNC shall pass the contents of *RAB ID* IE to the radio interface protocol for each RAB requested to establish or modify.

The RNC shall establish or modify the resources according to the values of the *Allocation/Retention Priority* IE (priority level, pre-emption indicators, queuing) and the resource situation as follows:

- The RNC shall consider the priority level of the requested RAB, when deciding on the resource allocation.
- If the requested RAB is allowed for queuing and the resource situation so requires, RNC may place the RAB in the establishment queue.

- The priority levels and the pre-emption indicators may (singularly or in combination) be used to determine whether the RAB assignment has to be performed unconditionally and immediately. If the requested RAB is marked as "may trigger pre-emption" and the resource situation so requires, RNC may trigger the pre-emption procedure which may then cause the forced release of a lower priority RAB which is marked as "pre-emptable". Whilst the process and the extent of the pre-emption procedure is operator dependent, the pre-emption indicators, if given in the RAB ASSIGNMENT REQUEST message, shall be treated as follows:
 1. The values of the last received *Pre-emption Vulnerability* IE and *Priority Level* IE shall prevail.
 2. If the *Pre-emption Capability* IE is set to "may trigger pre-emption", then this allocation request may trigger the pre-emption procedure.
 3. If the *Pre-emption Capability* IE is set to "shall not trigger pre-emption", then this allocation request shall not trigger the pre-emption procedure.
 4. If the *Pre-emption Vulnerability* IE is set to "pre-emptable", then this connection shall be included in the pre-emption process.
 5. If the *Pre-emption Vulnerability* IE is set to "not pre-emptable", then this connection shall not be included in the pre-emption process.
 6. If the *Priority Level* IE is set to "no priority" the given values for the *Pre-emption Capability* IE and *Pre-emption Vulnerability* IE shall not be considered. Instead the values "shall not trigger pre-emption" and "not pre-emptable" shall prevail.
- If the *Allocation/Retention Priority* IE is not given in the RAB ASSIGNMENT REQUEST message, the allocation request shall not trigger the pre-emption process and the connection may be pre-empted and considered to have the value "lowest" as priority level. Moreover, queuing shall not be allowed.
- The UTRAN pre-emption process shall keep the following rules:
 1. UTRAN shall only pre-empt RABs with lower priority, in ascending order of priority.
 2. The pre-emption may be done for RABs belonging to the same UE or to other UEs.

If the *NAS Synchronisation Indicator* IE is contained in the RAB ASSIGNMENT REQUEST message, the RNC shall pass it to the radio interface protocol for the transfer to the UE.

If the RAB ASSIGNMENT REQUEST message includes the *PDP Type Information* IE, the UTRAN may use this to configure any compression algorithms.

If the *Service Handover* IE is included, this tells if the RAB

- should be handed over to GSM, i.e. from NAS point of view, the RAB should be handed over to GSM as soon as possible although the final decision whether to perform a handover to GSM is still made in UTRAN.
- should not be handed over to GSM, i.e. from NAS point of view, the RAB should remain in UMTS as long as possible although the final decision whether to perform a handover to GSM is still made in UTRAN.
- shall not be handed over to GSM, i.e. the RAB shall never be handed over to GSM. This means that UTRAN shall not initiate handover to GSM for the UE unless the RABs with this indication have first been released with the normal release procedures.

The value of the *Service Handover* IE is valid throughout the lifetime of the RAB or until changed by a RAB modification.

The *Service Handover* IE shall only influence decisions made regarding UTRAN initiated handovers.

If the *Service Handover* IE is not included, the decision whether to perform a handover to GSM is only an internal UTRAN matter.

UTRAN shall report to CN, in the first RAB ASSIGNMENT RESPONSE message, the result for all the requested RABs, such as:

- List of RABs successfully established or modified.

- List of RABs released.
- List of RABs queued.
- List of RABs failed to establish or modify.
- List of RABs failed to release.

The same RAB ID shall only be present once in the whole RAB ASSIGNMENT RESPONSE message.

For each RAB successfully established towards the PS domain, the RNC shall include the *Transport Layer Address IE* and the *Iu Transport Association IE* in the RAB ASSIGNMENT RESPONSE message.

For each RAB successfully modified or released towards the PS domain, for which data volume reporting has been requested, the RNC shall include the *DL Data Volumes IE* in the RAB ASSIGNMENT RESPONSE message.

For each RAB successfully released towards the PS domain, the RNC shall include in the RAB ASSIGNMENT RESPONSE message, if available, the *DL GTP-PDU Sequence Number IE* and the *UL GTP-PDU Sequence Number IE*, if the release was initiated by UTRAN.

The RNC shall report in the RAB ASSIGNMENT RESPONSE message at least one RAB

- setup/modified or
- released or
- queued or
- failed to setup/modify or
- failed to release.

If any alternative RAB parameter values have been used when establishing or modifying a RAB, these RAB parameter values shall be included in the RAB ASSIGNMENT RESPONSE message.

For the CS domain, UTRAN shall report the outcome of a specific RAB to establish or modify only after the transport network control plane signalling, which is needed for RAB establishment or modification, has been executed. At a RAB establishment, the transport network control plane signalling shall use the *Transport Layer Address IE* and *Iu Transport Association IE*. At a RAB modification when *Transport Layer Address IE* and *Iu Transport Association IE* is included, ~~it is up to the RNC to decide if any transport network control plane signalling shall be performed or if the already existing transport bearer shall be used. If the RNC decides to~~ establish a new transport bearer, the transport network control plane signalling shall then use the possibly-included *Transport Layer Address IE* and *Iu Transport Association IE*. Then the switch over to this new transport bearer shall be done immediately after transport bearer establishment and initialisation of the user plane mode. If *Transport Layer Address IE* and *Iu Transport Association IE* is not included, then the RNC decides to may modify the already existing transport bearer; the transport network control plane signalling shall not use the possibly included *Transport Layer Address IE* and *Iu Transport Association IE*. That is, re-binding with *Iu Transport Association IE* shall not be done.

For each RAB successfully modified towards the PS domain, if the RNC has changed the *Transport Layer Address IE* and/or the *Iu Transport Association IE*, it shall include the new value(s) in the RAB ASSIGNMENT RESPONSE message.

Before reporting the successful outcome of a specific RAB to establish or modify, the RNC shall have executed the initialisation of the user plane mode as requested by the CN in the *User Plane Mode IE*. If the RNC is requested to execute the user plane initialisation for the *User Plane Mode* "support mode for predefined SDU sizes", it shall initialise all RAB subflow combinations on Iu as indicated in the *RAB parameters IE*. If not all of the indicated RAB subflow combinations can be initialised the RAB Assignment fails with the cause value "RNC unable to establish all RFCs". The user plane initialisation is described in ref.[6].

In case of establishment of a RAB for the PS domain, the CN must be prepared to receive user data before the RAB ASSIGNMENT RESPONSE message has been received.

If none of the RABs have been queued, the CN shall stop timer $T_{RAB\text{Assgt}}$. And the RAB Assignment procedure terminates. In that case, the procedure shall also be terminated in UTRAN.

When the request to establish or modify one or several RABs is put in the queue, UTRAN shall start the timer T_{QUEUING} . This timer specifies the maximum time for queuing of the request of establishment or modification. The same timer T_{QUEUING} is supervising all RABs being queued.

For each RAB that is queued the following outcomes shall be possible:

- successfully established or modified;
- failed to establish or modify;
- failed due to expiry of the timer T_{QUEUING} .

For the queued RABs, indicated in the first RAB ASSIGNMENT RESPONSE message, UTRAN shall report the outcome of the queuing for every RAB individually or for several RABs in subsequent RAB ASSIGNMENT RESPONSE message(s). This is left to implementation. UTRAN shall stop T_{QUEUING} when all RABs have been either successfully established or modified or failed to establish or modify. The RAB Assignment procedure is then terminated both in CN and UTRAN when all RABs have been responded to.

When CN receives the response that one or several RABs are queued, CN shall expect UTRAN to provide the outcome of the queuing function for each RAB before expiry of the T_{RABASSGT} timer. In case the timer T_{RABASSGT} expires, the CN shall consider the RAB Assignment procedure terminated and the RABs not reported shall be considered as failed.

In the case the timer T_{QUEUING} expires, the RAB Assignment procedure terminates in UTRAN for all queued RABs, and UTRAN shall respond for all of them in one RAB ASSIGNMENT RESPONSE message. The RAB Assignment procedure shall also be terminated in CN.

In case a request to modify or release a RAB contains the RAB ID of a RAB being queued, the RAB shall be taken out of the queue and treated according to the second request. The first request shall be responded to as a RAB failed to setup or modify with the cause value "Request superseded".

When UTRAN reports unsuccessful establishment/modification of a RAB, the cause value should be precise enough to enable the core network to know the reason for unsuccessful establishment/modification. Typical cause values are: "Requested Traffic Class not Available", "Invalid RAB Parameters Value", "Requested Maximum Bit Rate not Available", "Requested Maximum Bit Rate for DL not Available", "Requested Maximum Bit Rate for UL not Available", "Requested Guaranteed Bit Rate not Available", "Requested Guaranteed Bit Rate for DL not Available", "Requested Guaranteed Bit Rate for UL not Available", "Requested Transfer Delay not Achievable", "Invalid RAB Parameters Combination", "Condition Violation for SDU Parameters", "Condition Violation for Traffic Handling Priority", "Condition Violation for Guaranteed Bit Rate", "User Plane Versions not Supported", "Iu UP Failure", "Iu Transport Connection Failed to Establish".

If the RAB ID of a RAB requested to be released is unknown in the RNC, this shall be reported as a RAB failed to release with the cause value "Invalid RAB ID".

The RNC may indicate an impending directed retry attempt to GSM by sending RAB ASSIGNMENT RESPONSE message with a RAB ID included in the list of RABs failed to setup and a cause value of "Directed Retry".

The RNC shall be prepared to receive a RAB ASSIGNMENT REQUEST message containing a *RABs To Be Released* IE at any time and shall always reply to it. If there is an ongoing RAB Assignment procedure for a RAB indicated within the *RABs To Be Released* IE, the RNC shall discard the preceding RAB Assignment procedure for that specific RAB, release any related resources and report the released RAB within the RAB ASSIGNMENT RESPONSE message.

After sending RAB ASSIGNMENT RESPONSE message containing RAB ID within the *RABs Released* IE, the RNC shall be prepared to receive new establishment request of a RAB identified by the same RAB ID

8.2.3 Unsuccessful Operation

The unsuccessful operation for this Class 3 Elementary procedure is described under the Successful Operation chapter.

8.2.4 Abnormal Conditions

For a RAB requested to be modified, if only the *RAB ID* IE, the *NAS Synchronisation Indicator* IE and the *Transport Layer Information* IE are included in the *First Setup or Modify Item* IE this RAB shall not be modified, and the

corresponding *RAB ID IE* with *Cause IE* shall be included in the "RABs Failed To Setup Or Modify List" in the RAB ASSIGNMENT RESPONSE message.

If, for a RAB requested to be setup towards the PS domain, any of these following IEs:

- *PDP Type Information*.
- *Data Volume Reporting Indication*.

is not present, the RNC shall continue with the procedure.

Interactions with Relocation Preparation procedure:

If the relocation becomes necessary during the RAB Assignment procedure, the RNC may interrupt the ongoing RAB Assignment procedure and initiate the Relocation Preparation procedure as follows:

1. The RNC shall terminate the RAB Assignment procedure indicating unsuccessful RAB configuration modification:
 - for all queued RABs;
 - for RABs not already established or modified, and
 - for RABs not already released;with the cause "Relocation triggered".
2. The RNC shall terminate the RAB Assignment procedure indicating successful RAB configuration modification:
 - for RABs already established or modified but not yet reported to the CN, and
 - for RABs already released but not yet reported to the CN.
3. The RNC shall report this outcome of the procedure in one RAB ASSIGNMENT RESPONSE message.
4. The RNC shall invoke relocation by sending the RELOCATION REQUIRED message to the active CN node(s).
5. The CN shall terminate the RAB Assignment procedure at reception of the RAB ASSIGNMENT RESPONSE message.

Directed retry from UMTS to GSM (CS domain only):

In the case where the RNC has no RAB configuration for a particular UE in the CS domain, and the RNC receives a RAB ASSIGNMENT REQUEST message for that UE requesting the establishment of one RAB only, a directed retry to GSM may be initiated. In this case the RNC may interrupt the ongoing RAB Assignment procedure and initiate the Relocation Preparation procedure as follows:

1. The RNC shall terminate the RAB Assignment procedure indicating unsuccessful RAB configuration modification of that RAB with the cause "Directed retry".
2. The RNC shall report this outcome of the procedure in one RAB ASSIGNMENT RESPONSE message.
3. The RNC shall invoke relocation by sending the RELOCATION REQUIRED message to the active CN node, with the cause "Directed Retry".
4. The CN shall terminate the RAB Assignment procedure at reception of the RAB ASSIGNMENT RESPONSE message