

**TSG-RAN Meeting #14**  
**Kyoto, Japan, 11 - 14, December, 2001**

**TSGRP#14(01) 0848**

**Title:** Agreed CRs to TS 25.413

**Source:** TSG-RAN WG3

**Agenda item:** 8.3.3/8.3.4/9.4.3

RP Tdoc	R3 Tdoc	Spec	CR_Num	Rev	Release	CR_Subject	Cat	Cur_Ver	New_Ver	Workitem
RP-010848	R3-013613	25.413	387	2	R99	Chosen Integrity Protection Algorithm IE over MAP/E interface	F	3.7.0	3.8.0	TEI
RP-010848	R3-013559	25.413	378	1	Rel-4	Reason for LOCATION REPORT message is not clear	A	4.2.0	4.3.0	TEI
RP-010848	R3-013614	25.413	388	2	Rel-4	Chosen Integrity Protection Algorithm IE over MAP/E interface	A	4.2.0	4.3.0	TEI
RP-010848	R3-013655	25.413	386	2	Rel-4	Addition of amendment to clarify the PER encoding of bitstrings	A	4.2.0	4.3.0	TEI
RP-010848	R3-013654	25.413	385	2	R99	Addition of amendment to clarify the PER encoding of bitstrings	F	3.7.0	3.8.0	TEI
RP-010848	R3-013293	25.413	383		Rel-4	Procedure Code Criticality in Error Indication	A	4.2.0	4.3.0	TEI
RP-010848	R3-013292	25.413	382		R99	Procedure Code Criticality in Error Indication	F	3.7.0	3.8.0	TEI
RP-010848	R3-013623	25.413	380	1	Rel-4	Corrections to RRC information containers	A	4.2.0	4.3.0	TEI
RP-010848	R3-013622	25.413	379	1	R99	Corrections to RRC information containers	F	3.7.0	3.8.0	TEI
RP-010848	R3-013106	25.413	390		Rel-4	Rapporteurs corrections in RANAP (MCC/MNC)	A	4.2.0	4.3.0	TEI
RP-010848	R3-013086	25.413	361		Rel-4	CR on Traffic Handling Priority range	A	4.2.0	4.3.0	TEI
RP-010848	R3-013558	25.413	377	1	R99	Reason for LOCATION REPORT message is not clear	F	3.7.0	3.8.0	TEI
RP-010848	R3-013085	25.413	360		R99	CR on Traffic Handling Priority range	F	3.7.0	3.8.0	TEI
RP-010848	R3-013105	25.413	389		R99	Rapporteurs corrections in RANAP (MCC/MNC)	F	3.7.0	3.8.0	TEI
RP-010848	R3-013103	25.413	364		R99	Bitstrings ordering	F	3.7.0	3.8.0	TEI
RP-010848	R3-013104	25.413	365		Rel-4	Bitstrings ordering	A	4.2.0	4.3.0	TEI
RP-010848	R3-013611	25.413	368	2	R99	UP Versions not supported	F	3.7.0	3.8.0	TEI
RP-010848	R3-013612	25.413	369	2	Rel-4	UP Versions not supported	A	4.2.0	4.3.0	TEI
RP-010848	R3-013517	25.413	370	1	R99	Location Report Area	F	3.7.0	3.8.0	TEI
RP-010848	R3-013518	25.413	371	1	Rel-4	Location Report Area	A	4.2.0	4.3.0	TEI

## CHANGE REQUEST

⌘ **25.413 CR 360** ⌘ ev **2** ⌘ Current version: **3.7.0** ⌘

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

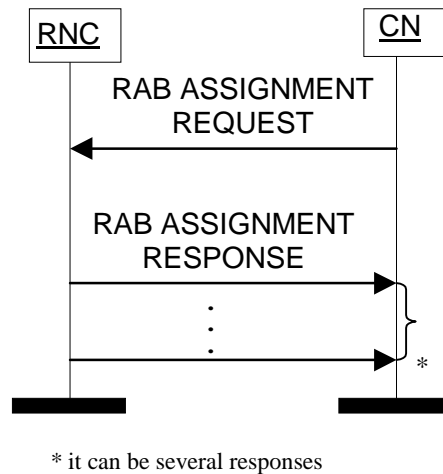
<b>Title:</b>	⌘ CR on Priority range		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 17-10-2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ In Traffic Handling Priority and Allocation/Retention priority IEs, it is not clear whether priority values 2 to 13 are possible or not. The initial intention of the group was to define 15 values. The text in ASN.1 was inserted only to specify which value is the highest priority and which value is the lowest priority. In addition, the behaviour of the RNC upon receipt of "spare" value (0) is not specified.
<b>Summary of change:</b>	⌘ Rev 2: In the tabular format, value 15 (no-priority) description is removed since already in the procedure text. Behaviour related to value zero is specified for the receiving side only and treated as a logical error for backward compatibility reasons.  Rev1: <ul style="list-style-type: none"> <li>• "no priority used" is changed to "no priority" for alignment to ASN.1.</li> <li>• The text in ASN.1 is kept as the original since the details are inserted in the tabular format section</li> </ul> Rev 0: The specifications of highest and lowest priorities are moved to the tabular format section. The behaviour upon receipt of the spare value (0) is specified.  Impact Analysis: This CR has no impact with the previous version of the specification (same release) with the assumed interpretation of the previous version of the specification.
<b>Consequences if not approved:</b>	⌘ The use of values 2 to 13 would remain unclear and may lead to different implementations and interoperability problems.

<b>Clauses affected:</b>	⌘ 8.2.2, 9.2.1.3
--------------------------	------------------

<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/>	Other core specifications	⌘ 25.413 v4.2.0 CR361
	<input type="checkbox"/>	Test specifications	25.423 v 3.7.0 CR477, 25.423 v4.2.0 CR478
	<input type="checkbox"/>	O&M Specifications	25.433 v3.7.0 CR529, 25.433 v4.2.1 CR530
<b>Other comments:</b>	⌘		

## 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. User Plane Mode and 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 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-used" 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.

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. The transport network control plane signalling shall use the *Transport Layer Address IE* and *Iu Transport Association IE*. At a RAB modification, it is up to the RNC to decide if any transport network control plane signalling shall be performed for the possibly included *Transport Layer Address IE* and *Iu Transport Association IE* or if the already existing transport bearer shall be used. If the RNC decides to establish a new transport bearer, 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 no Transport Layer Information was included in the RAB ASSIGNMENT REQUEST message at a RAB modification, no transport network control plane signalling shall occur.

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*. This 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  $T_{RABAssgt}$ . 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



Next change

### 9.2.1.3 RAB Parameters

The purpose of the *RAB parameters* IE group and other parameters within the *RAB parameters* IE group is to indicate all RAB attributes as defined in [7] for both directions.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
>Traffic Class	M		ENUMERATED (conversational, streaming, interactive, background, ...)	<b>Desc.:</b> This IE indicates the type of application for which the Radio Access Bearer service is optimised
>RAB Asymmetry Indicator	M		ENUMERATED (Symmetric bidirectional, Asymmetric Uni directional downlink, Asymmetric Uni directional Uplink, Asymmetric Bidirectional, ...)	<b>Desc.:</b> This IE indicates asymmetry or symmetry of the RAB and traffic direction
>Maximum Bit Rate	M	1 to <nbr-SeparateTrafficDirections>	INTEGER (1..16,000,000)	<b>Desc.:</b> This IE indicates the maximum number of bits delivered by UTRAN and to UTRAN at a SAP within a period of time, divided by the duration of the period. The unit is: bit/s <b>Usage:</b> When nbr-SeparateTrafficDirections is equal to 2, then Maximum Bit Rate attribute for downlink is signalled first, then Maximum Bit Rate attribute for uplink
>Guaranteed Bit Rate	C- iftrafficCon v-Stream	0 to <nbr-SeparateTrafficDirections>	INTEGER (0..16,000,000)	<b>Desc.:</b> This IE indicates the guaranteed number of bits delivered at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The unit is: bit/s <b>Usage:</b> 1. When nbr-SeparateTrafficDirections is equal to 2, then Guaranteed Bit Rate for downlink is signalled first, then Guaranteed Bit Rate for uplink 2. Delay and reliability attributes only apply up to the guaranteed bit rate 3. Conditional value: Set to lowest rate controllable bitrate, where bitrate is either – one of the RAB subflow combination bitrate IEs (when present) or – one of the calculated values given when dividing the compound Subflow combination SDU sizes by the value of the IE Maximum SDU Size and then multiplying this result by the value of the IE Maximum Bit Rate.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
>Delivery Order	M		ENUMERATED (delivery order requested, delivery order not requested)	<b>Desc.:</b> This IE indicates whether the RAB shall provide in-sequence SDU delivery or not <b>Usage:</b> Delivery order requested: in sequence delivery shall be guaranteed by UTRAN on all RAB SDUs Delivery order not requested: in sequence delivery is not required from UTRAN
>Maximum SDU Size	M		INTEGER (0..32768)	<b>Desc.:</b> This IE indicates the maximum allowed SDU size The unit is: bit. <b>Usage:</b> Conditional value: Set to largest RAB Subflow Combination compound SDU size (when present) among the different RAB Subflow Combinations
<b>&gt; SDU parameters</b>		1 to <maxRABSubflows>	See below	<b>Desc.:</b> This IE contains the parameters characterizing the RAB SDUs <b>Usage:</b> Given per subflow with first occurrence corresponding to subflow#1 etc...
>Transfer Delay	C-iftrafficCon v-Stream		INTEGER (0..65535)	<b>Desc.:</b> This IE indicates the maximum delay for 95th percentile of the distribution of delay for all delivered SDUs during the lifetime of a RAB, where delay for an SDU is defined as the time from a request to transfer an SDU at one SAP to its delivery at the other SAP The unit is: millisecond. <b>Usage:</b> -
>Traffic Handling Priority	C-iftrafficInteractiv		INTEGER {spare (0), highest (1), ..., lowest (14), no priority-used (15)} (0..15)	<b>Desc.:</b> This IE specifies the relative importance for handling of all SDUs belonging to the radio access bearer compared to the SDUs of other bearers <b>Usage:</b> - <u>Values between 1 and 14 are ordered in decreasing order of priority, '1' being the highest and '14' the lowest.</u> Value 0 shall be treated as a logical error if received.
<b>&gt;Allocation/Retention priority</b>	O		See below	<b>Desc.:</b> This IE specifies the relative importance compared to other Radio access bearers for allocation and retention of the Radio access bearer. <b>Usage:</b> If this IE is not received, the request is regarded as it cannot trigger the pre-emption process and it is vulnerable to the pre-emption process.
>Source Statistics Descriptor	C-iftrafficCon v-Stream		ENUMERATED (speech, unknown, ...)	<b>Desc.:</b> This IE specifies characteristics of the source of submitted SDUs <b>Usage:</b> -
>Relocation	O		ENUMERATED (lossless, none,	This IE shall be present for RABs towards the PS domain,

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
Requirement			(...)	otherwise it shall not be present. <b>Desc.:</b> This IE is no longer used. <b>Usage:</b> It shall always be set to "none" when sent and it shall always be ignored when received.

Range Bound	Explanation
nbr-SeparateTrafficDirection	Number of Traffic Directions being signalled separately. Set to 2 if RAB asymmetry indicator is asymmetric bidirectional. Set to 1 in all other cases.

Range Bound	Explanation
maxRABSubflows	Maximum number of Subflows per RAB. Value is 7

Condition	Explanation
lfttrafficConv-Stream	This IE shall be present if the <i>Traffic Class</i> IE is set to "Conversational" or "Streaming".
lfttrafficInteractiv	This IE shall be present if the <i>Traffic Class</i> IE is set to "Interactive".

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SDU parameters</b>				
> SDU Error Ratio	C- ifErroneou sSDU			<b>Desc.:</b> This IE indicates the fraction of SDUs lost or detected as erroneous. This is a Reliability attribute <b>Usage:</b> The attribute is coded as follows: Mantissa * 10 <sup>-exponent</sup>
>>Mantissa	M		INTEGER (1..9)	
>>Exponent	M		INTEGER (1..6)	
>Residual Bit Error Ratio	M			<b>Desc.:</b> This IE indicates the undetected bit error ratio for each subflow in the delivered SDU. This is a Reliability attribute. <b>Usage:</b> The attribute is coded as follows: Mantissa * 10 <sup>-exponent</sup>
>>Mantissa	M		INTEGER (1..9)	
>>Exponent	M		INTEGER (1..8)	
>Delivery Of Erroneous SDU	M		ENUMERATED (yes, no, no-error-detection-consideration)	<b>Desc.:</b> This IE indicates whether SDUs with detected errors shall be delivered or not. In case of unequal error protection, the attribute is set per subflow This is a Reliability attribute <b>Usage:</b> Yes: error detection applied, erroneous SDU delivered No: Error detection is applied , erroneous SDU discarded no-error-detection-consideration: SDUs delivered without considering error detection
>SDU format information Parameter	C - IfSMPref	1 to <maxRABSubflow	See below	<b>Desc.:</b> This IE contains the list of possible exact sizes of SDUs and/or RAB Subflow

	inedSDUSi ze	Combinations>		Combination bit rates. Given per RAB Subflow Combination with first occurrence corresponding to RAB Subflow Combination number 1. It shall always be present for rate controllable RABs.
--	-----------------	---------------	--	--

Range Bound	Explanation
maxRABSubflowCombinations	Maximum number of RAB Subflow Combinations. Value is 64.

Condition	Explanation
IfErroneousSDU	This IE shall be present if the <i>Delivery Of Erroneous SDU</i> IE is set to "Yes" or "No".
IfSMPredefinedSDUSize	This IE shall be present for RABs with the IE User Plane Mode set to 'support mode for pre-defined SDU sizes'.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SDU Format Information Parameter</b>				At least one of the <i>Subflow SDU size</i> IE and the <i>RAB Subflow Combination bit rate</i> IE shall be present when <i>SDU format information Parameter</i> IE is present.
>Subflow SDU Size	O		INTEGER (0..4095)	<b>Desc.:</b> This IE indicates the exact size of the SDU. The unit is: bit. <b>Usage:</b> This IE is only used for RABs that have predefined SDU size(s). It shall be present for RABs having more than one subflow. When this IE is not present and SDU format information Parameter is present, then the Subflow SDU size for the only existing subflow takes the value of the IE Maximum SDU size.
>RAB Subflow Combination Bit Rate	O		INTEGER (0..16,000,000 )	<b>Desc.:</b> This IE indicates the RAB Subflow Combination bit rate. The unit is: bit/s. <b>Usage:</b> This IE is only present for RABs that have predefined rate controllable bit rates. When this IE is not present and SDU format information parameter is present then all Subflow SDUs are transmitted (when there is data to be transmitted) at a constant time interval. The value of this IE shall not exceed the maximum value of the IEs 'Maximum Bit Rate'. The value 0 of RAB Subflow Combination bitrate indicates that the RAB uses discontinuous transfer of the SDUs.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Allocation/Retention Priority</b>				
>Priority Level	M		INTEGER {spare (0), highest (1), ... lowest (14), no priority used (15)} (0..15)	<b>Desc.:</b> This IE indicates the priority of the request. <b>Usage:</b> <u>Values between 1 and 14 are ordered in decreasing order of priority, '1' being the highest and '14' the lowest.</u> <u>Value 0 shall be treated as a logical error if received.</u> The priority level and the preemption indicators may be used to determine whether the request has to be performed unconditionally and immediately
>Pre-emption Capability	M		ENUMERATE D(shall not trigger pre-emption, may trigger pre-emption)	<b>Desc.:</b> This IE indicates the pre-emption capability of the request on other RABs <b>Usage:</b> The RAB shall not pre-empt other RABs or, the RAB may pre-empt other RABs The Pre-emption Capability indicator applies to the allocation of resources for a RAB and as such it provides the trigger to the pre-emption procedures/processes of the RNS.
>Pre-emption Vulnerability	M		ENUMERATE D(not pre-emptable, pre-emptable)	<b>Desc.:</b> This IE indicates the vulnerability of the RAB to preemption of other RABs. <b>Usage:</b> The RAB shall not be pre-empted by other RABs or the RAB may be pre-empted by other RABs. Pre-emption Vulnerability indicator applies for the entire duration of the RAB, unless modified and as such indicates whether the RAB is a target of the pre-emption procedures/processes of the RNS
>Queuing Allowed	M		ENUMERATE D(queuing not allowed, queuing allowed)	<b>Desc.:</b> This IE indicates whether the request can be placed into a resource allocation queue or not. <b>Usage:</b> Queuing of the RAB is allowed Queuing of the RAB is not allowed Queuing allowed indicator applies for the entire duration of the RAB, unless modified.

## CHANGE REQUEST

⌘ **25.413 CR 361** ⌘ ev **2** ⌘ Current version: **4.2.0** ⌘

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

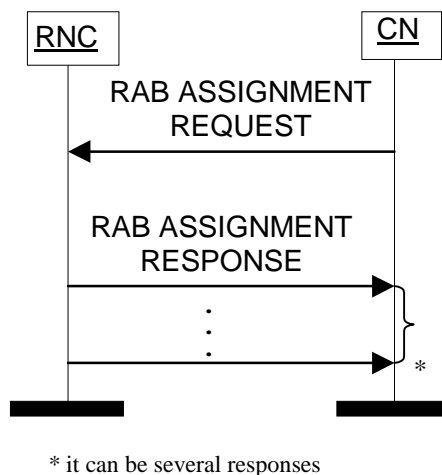
<b>Title:</b>	⌘ CR on Priority range		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 17-10-2001
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ R4
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)</p> <p><b>A</b> (corresponds to a correction in an earlier release)</p> <p><b>B</b> (addition of feature),</p> <p><b>C</b> (functional modification of feature)</p> <p><b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>

<b>Reason for change:</b>	⌘ In Traffic Handling Priority and Allocation/Retention priority IEs, it is not clear whether priority values 2 to 13 are possible or not. The initial intention of the group was to define 15 values. The text in ASN.1 was inserted only to specify which value is the highest priority and which value is the lowest priority. In addition, the behaviour of the RNC upon receipt of "spare" value (0) is not specified.
<b>Summary of change:</b>	⌘ <p>Rev 2:</p> <p>In the tabular format, value 15 (no-priority) description is removed since already in the procedure text. Behaviour related to value zero is specified for the receiving side only and treated as a logical error for backward compatibility reasons.</p> <p>Rev1:</p> <ul style="list-style-type: none"> <li>• "no priority used" is changed to "no priority" for alignment to ASN.1.</li> <li>• The text in ASN.1 is kept as the original since the details are inserted in the tabular format section</li> </ul> <p>Rev 0:</p> <p>The specifications of highest and lowest priorities are moved to the tabular format section.</p> <p>The behaviour upon receipt of the spare value (0) is specified.</p> <p>Impact Analysis:</p> <p>This CR has no impact with the previous version of the specification (same release) with the assumed interpretation of the previous version of the specification.</p>
<b>Consequences if not approved:</b>	⌘ The use of values 2 to 13 would remain unclear and may lead to different implementations and interoperability problems.

**Clauses affected:** ⌘ 8.2.2, 9.2.1.3

<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/>	Other core specifications	⌘ 25.413 v3.7.0 CR360
	<input type="checkbox"/>	Test specifications	25.423 v3.7.0 CR477, 25.423 v4.2.0 CR478
	<input type="checkbox"/>	O&M Specifications	25.433 v3.7.0 CR529, 25.433 v4.2.1 CR530
<b>Other comments:</b>	⌘		

## 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-used" 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, 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 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 the RNC decides to 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  $T_{\text{RABAssgt}}$ . 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  $T_{\text{QUEUING}}$ . This timer specifies the maximum time for queuing of the request of establishment or modification. The same timer  $T_{\text{QUEUING}}$  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  $T_{\text{QUEUING}}$ .

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  $T_{\text{QUEUING}}$  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  $T_{\text{RABASSGT}}$  timer. In case the timer  $T_{\text{RABASSGT}}$  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  $T_{\text{QUEUING}}$  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

Next change

### 9.2.1.3 RAB Parameters

The purpose of the *RAB parameters* IE group and other parameters within the *RAB parameters* IE group is to indicate all RAB attributes as defined in [7] for both directions.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
>Traffic Class	M		ENUMERATED (conversational, streaming, interactive, background, ...)	<b>Desc.:</b> This IE indicates the type of application for which the Radio Access Bearer service is optimised
>RAB Asymmetry Indicator	M		ENUMERATED (Symmetric bidirectional, Asymmetric Uni directional downlink, Asymmetric Uni directional Uplink, Asymmetric Bidirectional, ...)	<b>Desc.:</b> This IE indicates asymmetry or symmetry of the RAB and traffic direction
>Maximum Bit Rate	M	1 to <nbr-SeparateTrafficDirections>	INTEGER (1..16,000,000)	<b>Desc.:</b> This IE indicates the maximum number of bits delivered by UTRAN and to UTRAN at a SAP within a period of time, divided by the duration of the period. The unit is: bit/s <b>Usage:</b> When nbr-SeparateTrafficDirections is equal to 2, then Maximum Bit Rate attribute for downlink is signalled first, then Maximum Bit Rate attribute for uplink
>Guaranteed Bit Rate	C- iftrafficCon v-Stream	0 to <nbr-SeparateTrafficDirections>	INTEGER (0..16,000,000)	<b>Desc.:</b> This IE indicates the guaranteed number of bits delivered at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The unit is: bit/s <b>Usage:</b> 1. When nbr-SeparateTrafficDirections is equal to 2, then Guaranteed Bit Rate for downlink is signalled first, then Guaranteed Bit Rate for uplink 2. Delay and reliability attributes only apply up to the guaranteed bit rate 3. Conditional value: Set to lowest rate controllable bitrate, where bitrate is either – one of the RAB subflow combination bitrate IEs (when present) or – one of the calculated values given when dividing the compound Subflow combination SDU sizes by the value of the IE Maximum SDU Size and then multiplying this result by the value of the IE Maximum Bit Rate.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
>Delivery Order	M		ENUMERATED (delivery order requested, delivery order not requested)	<b>Desc.:</b> This IE indicates whether the RAB shall provide in-sequence SDU delivery or not <b>Usage:</b> Delivery order requested: in sequence delivery shall be guaranteed by UTRAN on all RAB SDUs Delivery order not requested: in sequence delivery is not required from UTRAN
>Maximum SDU Size	M		INTEGER (0..32768)	<b>Desc.:</b> This IE indicates the maximum allowed SDU size The unit is: bit. <b>Usage:</b> Conditional value: Set to largest RAB Subflow Combination compound SDU size (when present) among the different RAB Subflow Combinations
<b>&gt;SDU parameters</b>		1 to <maxRABSubflows>	See below	<b>Desc.:</b> This IE contains the parameters characterizing the RAB SDUs <b>Usage:</b> Given per subflow with first occurrence corresponding to subflow#1 etc...
>Transfer Delay	C - iftrafficCon v-Stream		INTEGER (0..65535)	<b>Desc.:</b> This IE indicates the maximum delay for 95th percentile of the distribution of delay for all delivered SDUs during the lifetime of a RAB, where delay for an SDU is defined as the time from a request to transfer an SDU at one SAP to its delivery at the other SAP The unit is: millisecond. <b>Usage:</b> -
>Traffic Handling Priority	C - iftrafficInteractiv		INTEGER {spare (0), highest (1), ..., lowest (14), no priority used (15)} (0..15)	<b>Desc.:</b> This IE specifies the relative importance for handling of all SDUs belonging to the radio access bearer compared to the SDUs of other bearers <b>Usage:</b> <u>Values between 1 and 14 are ordered in decreasing order of priority, '1' being the highest and '14' the lowest.</u> <u>Value 0 shall be treated as a logical error if received.-</u>
<b>&gt;Allocation/Retention priority</b>	O		See below	<b>Desc.:</b> This IE specifies the relative importance compared to other Radio access bearers for allocation and retention of the Radio access bearer. <b>Usage:</b> If this IE is not received, the request is regarded as it cannot trigger the pre-emption process and it is vulnerable to the pre-emption process.
>Source Statistics Descriptor	C - iftrafficCon v-Stream		ENUMERATED (speech, unknown, ...)	<b>Desc.:</b> This IE specifies characteristics of the source of submitted SDUs <b>Usage:</b> -
>Relocation	O		ENUMERATED (lossless, none,	This IE shall be present for RABs towards the PS domain,

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>RAB parameters</b>				
Requirement			..., realtime)	otherwise it shall not be present. <b>Desc.:</b> This IE is no longer used. <b>Usage:</b> It shall always be set to "none" when sent and it shall always be ignored when received.

Range Bound	Explanation
nbr-SeparateTrafficDirection	Number of Traffic Directions being signalled separately. Set to 2 if RAB asymmetry indicator is asymmetric bidirectional. Set to 1 in all other cases.

Range Bound	Explanation
maxRABSubflows	Maximum number of Subflows per RAB. Value is 7

Condition	Explanation
lfttrafficConv-Stream	This IE shall be present if the <i>Traffic Class</i> IE is set to "Conversational" or "Streaming"
lfttrafficInteractiv	This IE shall be present if the <i>Traffic Class</i> IE is set to "Interactive"

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SDU parameters</b>				
> SDU Error Ratio	C- ifErroneou sSDU			<b>Desc.:</b> This IE indicates the fraction of SDUs lost or detected as erroneous. This is a Reliability attribute <b>Usage:</b> The attribute is coded as follows: Mantissa * 10 <sup>-exponent</sup>
>>Mantissa	M		INTEGER (1..9)	
>>Exponent	M		INTEGER (1..6)	
>Residual Bit Error Ratio	M			<b>Desc.:</b> This IE indicates the undetected bit error ratio for each subflow in the delivered SDU. This is a Reliability attribute. <b>Usage:</b> The attribute is coded as follows: Mantissa * 10 <sup>-exponent</sup>
>>Mantissa	M		INTEGER (1..9)	
>>Exponent	M		INTEGER (1..8)	
>Delivery Of Erroneous SDU	M		ENUMERATED (yes, no, no-error-detection-consideration)	<b>Desc.:</b> This IE indicates whether SDUs with detected errors shall be delivered or not. In case of unequal error protection, the attribute is set per subflow This is a Reliability attribute <b>Usage:</b> Yes: error detection applied, erroneous SDU delivered No: Error detection is applied, erroneous SDU discarded no-error-detection-consideration: SDUs delivered without considering error detection
>SDU format information Parameter	C - IfSMPref	1 to <maxRABSubflow	See below	<b>Desc.:</b> This IE contains the list of possible exact sizes of SDUs and/or RAB Subflow

	inedSDUSi ze	Combinations>		Combination bit rates. Given per RAB Subflow Combination with first occurrence corresponding to RAB Subflow Combination number 1. It shall always be present for rate controllable RABs.
--	-----------------	---------------	--	--

Range Bound	Explanation
maxRABSubflowCombinations	Maximum number of RAB Subflow Combinations. Value is 64.

Condition	Explanation
IfErroneousSDU	This IE shall be present if the <i>Delivery Of Erroneous SDU</i> IE is set to "Yes" or "No".
IfSMPdefinedSDUSize	This IE shall be present for RABs with the IE User Plane Mode set to 'support mode for pre-defined SDU sizes'.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SDU Format Information Parameter</b>				At least one of the <i>Subflow SDU size</i> IE and the <i>RAB Subflow Combination bit rate</i> IE shall be present when <i>SDU format information Parameter</i> IE is present.
>Subflow SDU Size	O		INTEGER (0..4095)	<b>Desc.:</b> This IE indicates the exact size of the SDU. The unit is: bit. <b>Usage:</b> This IE is only used for RABs that have predefined SDU size(s). It shall be present for RABs having more than one subflow. When this IE is not present and SDU format information Parameter is present, then the Subflow SDU size for the only existing subflow takes the value of the IE Maximum SDU size.
>RAB Subflow Combination Bit Rate	O		INTEGER (0..16,000,000 )	<b>Desc.:</b> This IE indicates the RAB Subflow Combination bit rate. The unit is: bit/s. <b>Usage:</b> This IE is only present for RABs that have predefined rate controllable bit rates. When this IE is not present and SDU format information parameter is present then all Subflow SDUs are transmitted (when there is data to be transmitted) at a constant time interval. The value of this IE shall not exceed the maximum value of the IEs 'Maximum Bit Rate'. The value 0 of RAB Subflow Combination bitrate indicates that the RAB uses discontinuous transfer of the SDUs.



IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Allocation/Retention Priority</b>				
>Priority Level	M		INTEGER {spare (0), highest (1), ... lowest (14), no priority used (15)} (0..15)	<b>Desc.:</b> This IE indicates the priority of the request. <b>Usage:</b> <u>Values between 1 and 14 are ordered in decreasing order of priority, '1' being the highest and '14' the lowest.</u> <u>Value 0 shall be treated as a logical error if received.</u> The priority level and the preemption indicators may be used to determine whether the request has to be performed unconditionally and immediately
>Pre-emption Capability	M		ENUMERATE D(shall not trigger pre-emption, may trigger pre-emption)	<b>Desc.:</b> This IE indicates the pre-emption capability of the request on other RABs <b>Usage:</b> The RAB shall not pre-empt other RABs or, the RAB may pre-empt other RABs The Pre-emption Capability indicator applies to the allocation of resources for a RAB and as such it provides the trigger to the pre-emption procedures/processes of the RNS.
>Pre-emption Vulnerability	M		ENUMERATE D(not pre-emptable, pre-emptable)	<b>Desc.:</b> This IE indicates the vulnerability of the RAB to pre-emption of other RABs. <b>Usage:</b> The RAB shall not be pre-empted by other RABs or the RAB may be pre-empted by other RABs. Pre-emption Vulnerability indicator applies for the entire duration of the RAB, unless modified and as such indicates whether the RAB is a target of the pre-emption procedures/processes of the RNS
>Queuing Allowed	M		ENUMERATE D(queuing not allowed, queuing allowed)	<b>Desc.:</b> This IE indicates whether the request can be placed into a resource allocation queue or not. <b>Usage:</b> Queuing of the RAB is allowed Queuing of the RAB is not allowed Queuing allowed indicator applies for the entire duration of the RAB, unless modified.

## CHANGE REQUEST

⌘ **25.413** **CR** **364** ⌘ rev   ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Bitstrings ordering		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-14
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ It is important to clarify the bit ordering within IEs of type BIT STRING, i.e. to define how the information is stored in the bitstring to keep the integrity of the bit ordering.
<b>Summary of change:</b>	⌘ A clarification is added in subclause 9.2.0. This explains how to interpret the order of bits when specifying bitstrings.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, there is a risk of incompatibility due to inconsistent interpretations of the bit ordering.  <u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has no impact for implementations that assumed the hereby adopted interpretation.

<b>Clauses affected:</b>	⌘ 9.2.0		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ CR365 25.413 4.2.0	
<b>Other comments:</b>	⌘		

### 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](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.

## 9.2 Information Element Definitions

### 9.2.0 General

Section 9.2 presents the RANAP IE definitions in tabular format. The corresponding ASN.1 definition is presented in section 9.3. In case there is contradiction between the tabular format in section 9.2 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, where the tabular format shall take precedence.

When specifying information elements which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);
- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

### 9.2.1 Radio Network Layer Related IEs

## CHANGE REQUEST

⌘ **25.413** **CR** **365** ⌘ rev      ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Bitstrings ordering		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-14
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ It is important to clarify the bit ordering within IEs of type BIT STRING, i.e. to define how the information is stored in the bitstring to keep the integrity of the bit ordering.
<b>Summary of change:</b>	⌘ A clarification is added in subclause 9.2.0. This explains how to interpret the order of bits when specifying bitstrings.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, there is a risk of incompatibility due to inconsistent interpretations of the bit ordering  <u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has no impact for implementations that assumed the hereby adopted interpretation.  Compatibility Analysis towards previous release: This CR is compatible with implementations that assumed the hereby adopted interpretation.

<b>Clauses affected:</b>	⌘ 9.2.0		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	CR364 25.413 3.7.0
<b>Other comments:</b>	⌘		

**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](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.

## 9.2 Information Element Definitions

### 9.2.0 General

Section 9.2 presents the RANAP IE definitions in tabular format. The corresponding ASN.1 definition is presented in section 9.3. In case there is contradiction between the tabular format in section 9.2 and the ASN.1 definition, the ASN.1 shall take precedence, except for the definition of conditions for the presence of conditional elements, where the tabular format shall take precedence.

When specifying information elements which are to be represented by bitstrings, if not otherwise specifically stated in the semantics description of the concerned IE or elsewhere, the following principle applies with regards to the ordering of bits:

- The first bit (leftmost bit) contains the most significant bit (MSB);
- The last bit (rightmost bit) contains the least significant bit (LSB);
- When importing bitstrings from other specifications, the first bit of the bitstring contains the first bit of the concerned information;

### 9.2.1 Radio Network Layer Related IEs

**3GPP TSG-RAN WG3 Meeting #25**  
**Makuhari, Japan, November 26<sup>th</sup> – November 30<sup>th</sup>, 2001**

**R3-013611**

CR-Form-v3

**CHANGE REQUEST**

⌘ **25.413** **CR 368** ⌘ rev **2** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ User Plane Mode Version
<b>Source:</b>	⌘ R-WG3
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 26<sup>th</sup> November 2001</span>
<b>Category:</b>	⌘ <b>F</b> <span style="float: right;"><b>Release:</b> ⌘ R99</span>
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> <p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ The “UP Mode version” coding in RANAP has already been clarified as defined according to the TS25.415. However, to remove any ambiguity on the coding, it should clearly point to the IE “Iu UP Mode Versions supported” of TS25.415 and not “Iu UP Mode Version” of TS25415 which is coded differently. In addition, it shall be made clear that it is applicable also for the transparent mode.
<b>Summary of change:</b>	⌘ Pinpoint the coding of “UP Mode Version” to the accurate TS25.415 Information Element and clarify the coding for transparent mode.  Impact Analysis:  Impact assessment towards the previous version of the specification (same release): This CR has no impact with the previous version of the specification (same release) assuming the interpretation indicated in this CR.
<b>Consequences if not approved:</b>	⌘ Risk of coding mistake.

<b>Clauses affected:</b>	⌘ 9.2.1.19
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ 25.413 CR369 REL-4 <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
<b>Other comments:</b>	⌘



**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](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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

### 9.2.1.19 UP Mode Versions

*UP mode versions* IE is an information element that is sent by CN to RNC. It is a bit string that indicates the versions for the selected Iu UP mode that are supported by the CN. The Iu User plane mode versions ~~are~~ [shall be defined and coded as the “Iu UP Mode versions supported” field defined in \[6\]. This reference is applicable for both the transparent mode and the support mode for predefined SDU sizes.](#)

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UP Mode Versions	M		BIT STRING (16)	Indicates the versions of the selected UP mode that are supported by the CN

3GPP TSG-RAN WG3 Meeting #25  
Makuhari, Japan, November 26<sup>th</sup> – November 30<sup>th</sup>, 2001

R3-013612

CR-Form-v3

## CHANGE REQUEST

⌘ **25.413** **CR 369** ⌘ rev **2** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ User Plane Mode Version		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 26 <sup>th</sup> November 2001
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ The "UP Mode version" coding in RANAP has already been clarified as defined according to the TS25.415. However, to remove any ambiguity on the coding, it should clearly point to the IE "Iu UP Mode Versions supported" of TS25.415 and not "Iu UP Mode Version" of TS25415 which is coded differently. In addition, it shall be made clear that it is applicable also for the transparent mode.
<b>Summary of change:</b>	⌘ Pinpoint the coding of "UP Mode Version" to the accurate TS25.415 Information Element and clarify the coding for transparent mode.
	Impact Analysis:  Impact assessment towards the previous version of the specification (same release): This CR has no impact with the previous version of the specification (same release) assuming the interpretation indicated in this CR.
<b>Consequences if not approved:</b>	⌘ Risk of coding mistake.

<b>Clauses affected:</b>	⌘ 9.2.1.19
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ 25.413 CR368 R99 <input type="checkbox"/> Test specifications <input type="checkbox"/> 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](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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

### 9.2.1.19 UP Mode Versions

*UP mode versions* IE is an information element that is sent by CN to RNC. It is a bit string that indicates the versions for the selected Iu UP mode that are required and supported by the CN. The Iu User plane mode versions ~~are~~ shall be defined and coded as the “Iu UP Mode versions supported” field defined in [6]. [This reference is applicable for both the transparent mode and the support mode for predefined SDU sizes.](#)

IE/Group Name	Presence	Range	IE type and reference	Semantics description
UP Mode Versions	M		BIT STRING (16)	Indicates the versions of the selected UP mode that are required and supported by the CN

**3GPP TSG-RAN WG3 Meeting #25**  
**Makuhari, Japan, November 26<sup>th</sup> – November 30<sup>th</sup>, 2001**

**R3-013517**

CR-Form-v3

**CHANGE REQUEST**

⌘ **25.413** **CR 370** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Location Report Area
<b>Source:</b>	⌘ R-WG3
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 26<sup>th</sup> November 2001</span>
<b>Category:</b>	⌘ <b>F</b> <span style="float: right;"><b>Release:</b> ⌘ R99</span>
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> <p style="text-align: right;">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)</p>	

<b>Reason for change:</b>	⌘ The “Report Area” requested by the Request type of a Location Reporting Control message is defined as “service area” or “geographical coordinates”. However, to be consistent with the “Area identity” reported in the Location Report message, “geographical coordinates” should be changed into “geographical area”.
<b>Summary of change:</b>	⌘ Alignment between Report Area requested and the Area Identity reported.  Impact Analysis:  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 previous implementations may have considered geographical coordinates and not geographical area in the request type.  This CR has an impact under protocol point of view. The impact can be considered isolated because the change affects one system function, i.e. location reporting.
<b>Consequences if not approved:</b>	⌘ Inconsistency between IEs

<b>Clauses affected:</b>	⌘ 8.19.2, 8.20.2, 9.2.1.16, 9.3.4
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ 25.413 CR371 REL-4 <input type="checkbox"/> 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](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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

## 8.19 Location Reporting Control

### 8.19.1 General

The purpose of the Location Reporting Control procedure is to allow the CN to request information on the location of a given UE. The procedure uses connection oriented signalling.

### 8.19.2 Successful Operation



**Figure 1: Location Reporting Control procedure. Successful operation.**

The CN shall initiate the procedure by generating a LOCATION REPORTING CONTROL message.

The *Request Type* IE shall indicate to the serving RNC whether:

- to report directly;
- to report upon change of Service area, or
- to stop reporting at change of Service Area.

If reporting upon change of Service Area is requested, the Serving RNC shall report whenever the UE moves between Service Areas. For this procedure, only Service Areas that are defined for the PS and CS domains shall be considered.

The *Request Type* IE shall also indicate what type of location information the serving RNC shall report. The location information is either of the following types:

- Service Area Identifier, or
- Geographical ~~coordinates~~area, [including geographical coordinates](#) with or without requested accuracy.

A request for a direct report can be done in parallel with having an active request to report upon change of Service Area for the same UE. The request to report upon change of Service Area shall not be affected by this.

#### **Interaction with Relocation:**

The order to perform location reporting at change of Service Area is lost in UTRAN at successful Relocation of SRNS. If the location reporting at change of Service Area shall continue also after the relocation has been performed, the Location Reporting Control procedure shall thus be re-initiated from the CN towards the future SRNC after the Relocation Resource Allocation procedure has been executed successfully.

### 8.19.3 Abnormal Conditions

Not applicable.

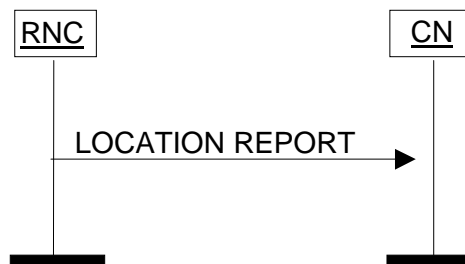
## 8.20 Location Report

### 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 2: 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.

If the RNC can not deliver the location information as requested by the CN, 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 Report Type not supported". If the *Cause* IE is set to "Requested Report Type not supported" the *Request Type* IE shall be included as a reference of what report type is not supported.

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request ~~for~~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, which both shall fulfill the requested accuracy as accurately as possible. If, on the other hand, no specific accuracy level was requested in the LOCATION REPORTING CONTROL message, it is up to UTRAN to decide with which accuracy to report.

## 8.20.3 Abnormal Conditions

Not applicable.

## 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 coordinates](#).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Request Type</b>				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ...)	
>Report Area	M		ENUMERATED(Service Area, Geographical <a href="#">AreaCoordinates</a> , ...)	When the Event IE is set to "Stop Change of service area", the value of the Report area IE shall be the same as in the LOCATION REPORTING CONTROL message that initiated the location reporting.
>Accuracy Code	O		INTEGER(0..127)	The requested accuracy "r" is derived from the "accuracy code" k by $r = 10 \times (1.1^k - 1)$

```
RelocationType ::= ENUMERATED {
    ue-not-involved,
    ue-involved,
    ...
}

RepetitionNumber0 ::= INTEGER (0..255)

RepetitionNumber1 ::= INTEGER (1..256)

ReportArea ::= ENUMERATED {
    service-area,
    geographical-areacoordinates,
    ...
}

RequestType ::= SEQUENCE {
    event                Event,
    reportArea           ReportArea,
    accuracyCode         INTEGER (0..127)    OPTIONAL, ...
}

ResidualBitErrorRatio ::= SEQUENCE {
    mantissa             INTEGER (1..9),
    exponent             INTEGER (1..8),
    iE-Extensions        ProtocolExtensionContainer { {ResidualBitErrorRatio-ExtIEs} } OPTIONAL
}
-- ResidualBitErrorRatio = mantissa * 10^-exponent

ResidualBitErrorRatio-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RNC-ID                ::= INTEGER (0..4095)
-- RNC-ID              ::= BIT STRING (SIZE (12))
-- Harmonized with RNSAP and NBAP definitions

RRC-Container          ::= OCTET STRING

-- S

SAC                    ::= OCTET STRING (SIZE (2))

SAI ::= SEQUENCE {
    pLMNidentity         PLMNidentity,
    lAC                  LAC,
    sAC                  SAC,
    iE-Extensions        ProtocolExtensionContainer { {SAI-ExtIEs} } OPTIONAL
}

SAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

SAPI ::= ENUMERATED {
    sapi-0,
    sapi-3,
    ...
}
```



**3GPP TSG-RAN WG3 Meeting #25**  
**Makuhari, Japan, November 26<sup>th</sup> – November 30<sup>th</sup>, 2001**

**R3-013518**

CR-Form-v3

**CHANGE REQUEST**

⌘ **25.413** **CR 371** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Location Report Area
<b>Source:</b>	⌘ R-WG3
<b>Work item code:</b>	⌘ TEI <span style="float: right;"><b>Date:</b> ⌘ 26<sup>th</sup> November 2001</span>
<b>Category:</b>	⌘ <b>A</b> <span style="float: right;"><b>Release:</b> ⌘ REL-4</span>
<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> <p style="text-align: right;">Use <u>one</u> of the following releases:  <b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>	

<b>Reason for change:</b>	⌘ The “Report Area” requested by the Request type of a Location Reporting Control message is defined as “service area” or “geographical coordinates”. However, to be consistent with the “Area identity” reported in the Location Report message, “geographical coordinates” should be changed into “geographical area”.
<b>Summary of change:</b>	⌘ Alignment between Report Area requested and the Area Identity reported.
	<p>Impact Analysis:</p> <p>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 previous implementations may have considered geographical coordinates and not geographical area in the request type.</p> <p>This CR has an impact under protocol point of view.                  The impact can be considered isolated because the change affects one system function, i.e. location reporting.</p>
<b>Consequences if not approved:</b>	⌘ Inconsistency between IEs

<b>Clauses affected:</b>	⌘ 8.19.2, 8.20.2, 9.2.1.16, 9.3.4
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications ⌘ 25.413 CR370 R99 <input type="checkbox"/> Test specifications <input type="checkbox"/> 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](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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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.

## 8.19 Location Reporting Control

### 8.19.1 General

The purpose of the Location Reporting Control procedure is to allow the CN to request information on the location of a given UE. The procedure uses connection oriented signalling.

### 8.19.2 Successful Operation



**Figure 1: Location Reporting Control procedure. Successful operation.**

The CN shall initiate the procedure by generating a LOCATION REPORTING CONTROL message.

The *Request Type* IE shall indicate to the serving RNC whether:

- to report directly;
- to report upon change of Service area, or
- to stop reporting at change of Service Area.

If reporting upon change of Service Area is requested, the Serving RNC shall report whenever the UE moves between Service Areas. For this procedure, only Service Areas that are defined for the PS and CS domains shall be considered.

The *Request Type* IE shall also indicate what type of location information the serving RNC shall report. The location information is either of the following types:

- Service Area Identifier, or
- Geographical [area, including geographical](#) coordinates, with or without requested accuracy, response time, priority and the client type.

A request for a direct report can be done in parallel with having an active request to report upon change of Service Area for the same UE. The request to report upon change of Service Area shall not be affected by this.

#### **Interaction with Relocation:**

The order to perform location reporting at change of Service Area is lost in UTRAN at successful Relocation of SRNS. If the location reporting at change of Service Area shall continue also after the relocation has been performed, the Location Reporting Control procedure shall thus be re-initiated from the CN towards the future SRNC after the Relocation Resource Allocation procedure has been executed successfully.

### 8.19.3 Abnormal Conditions

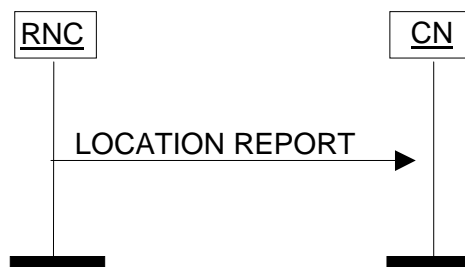
Not applicable.

## 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 2: 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.

If the RNC can not deliver the location information as requested by the CN, 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 Report Type not supported". If the *Cause* IE is set to "Requested Report Type not supported" the *Request Type* IE shall be included as a reference of what report type is not supported.

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request ~~to report for~~ 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 another 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, it is up to UTRAN to decide with which accuracy to report.

### 8.20.3 Abnormal Conditions

Not applicable.



## 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~~ ~~coordinates~~.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Request Type</b>				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ...)	
>Report Area	M		ENUMERATED(Service Area, Geographical <del>Area</del> <del>Coordinates</del> , ...)	When the Event IE is set to "Stop Change of service area", 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	O		INTEGER(0..127)	The requested accuracy "r" is derived from the "accuracy code" k by $r = 10x(1.1^k-1)$
>Vertical Accuracy Code	O		INTEGER(0..127)	The requested accuracy "r" is derived from the "accuracy code" k by $r = 10x(1.1^k-1)$
>Response time	C – ifDirect		ENUMERATED(Low Delay, Delay Tolerant, ...)	
>Positioning Priority	C – ifDirect&ChangeArea		ENUMERATED(High Priority, Normal Priority, ...)	
>Client type	C – ifDirect		ENUMERATED(Emergency Services, Value Added Services, PLMN Operator Services, Lawful Intercept Services, ...)	Identifies the type of client

Condition	Explanation
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".

```

RAI ::= SEQUENCE {
    LAI                LAI,
    rAC                RAC,
    iE-Extensions     ProtocolExtensionContainer { {RAI-ExtIEs} } OPTIONAL,
    ...
}

RAI-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

RateControlAllowed ::= ENUMERATED {
    not-allowed,
    allowed
}

RelocationRequirement ::= ENUMERATED {
    lossless,
    none,
    ...,
    realtime
}

RelocationType ::= ENUMERATED {
    ue-not-involved,
    ue-involved,
    ...
}

RepetitionNumber0 ::= INTEGER (0..255)

RepetitionNumber1 ::= INTEGER (1..256)

ReportArea ::= ENUMERATED {
    service-area,
    geographical-areacoordinates,
    ...
}

RequestedGPSAssistanceData ::= OCTET STRING (SIZE (1 .. 38 ))
    -- gpsAssistanceData as defined in 24.080 --

RequestedLocationRelatedDataType ::= ENUMERATED {
    decipheringKeysUEBasedOTDOA,
    decipheringKeysAssistedGPS,
    dedicatedAssistanceDataUEBasedOTDOA,
    dedicatedAssistanceDataAssistedGPS,
    ...
}

Requested-RAB-Parameter-Values ::= SEQUENCE {
    requestedMaxBitrates                Requested-RAB-Parameter-MaxBitrateList                OPTIONAL,
    requestedGuaranteedBitrates         Requested-RAB-Parameter-GuaranteedBitrateList
    OPTIONAL,
    iE-Extensions                       ProtocolExtensionContainer { { Requested-RAB-Parameter-Values-ExtIEs } }
    OPTIONAL,
    ...
}

Requested-RAB-Parameter-Values-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

Requested-RAB-Parameter-MaxBitrateList ::= SEQUENCE (SIZE (1..maxNrOfSeparateTrafficDirections)) OF
MaxBitrate

Requested-RAB-Parameter-GuaranteedBitrateList ::= SEQUENCE (SIZE
(1..maxNrOfSeparateTrafficDirections)) OF GuaranteedBitrate

```



## CHANGE REQUEST

⌘ **25.413** **CR** **377** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Reason for LOCATION REPORT message is not clear.		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-27
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification)		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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ If Location Reporting of geographical coordinates at change of Service Area is active and in parallel with this, a request for a Direct Report of geographical coordinates is issued, there is a risk that the CN can't distinguish between the different resulting LOCATION REPORT messages. The case when this will happen is when a LOCATION REPORT at change of Service Area arrives in the CN after the request for a direct report has been sent, but before the answer for this direct report has been received. Since there is no transaction id., the CN can't relate the answers to the correct request. In order to remove this error, it is thus suggested that Request Type is always included in the LOCATION REPORT message when it is sent as an answer to a request for a direct report or at a change of Service Area.
<b>Summary of change:</b>	⌘ The Request Type IE is made optional in the LOCATION REPORT message and procedure text is added to explain that the Report Type IE shall be included when the LOCATION REPORT message is sent as an answer to a request for a direct report or at a change of Service Area.  <u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has isolated impact since the condition for when to include the Request Type IE has been changed. This CR has impact under functional point of view. The impact can be considered isolated because the change affects one function, i.e. Location Reporting function.
<b>Consequences if not approved:</b>	⌘ It will not be possible in all cases to relate a LOCATION REPORT message to the correct request.

**Clauses affected:** ⌘ 8.20, 9.1.30, 9.3.3

<b>Other specs affected:</b>	<input checked="" type="checkbox"/>	Other core specifications	⌘ CR378 25.413 V4.2.0
	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	O&M Specifications	
<b>Other comments:</b>	⌘		

### 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](http://www.3gpp.org/3G_Specs/CRs.htm). Below is a brief summary:

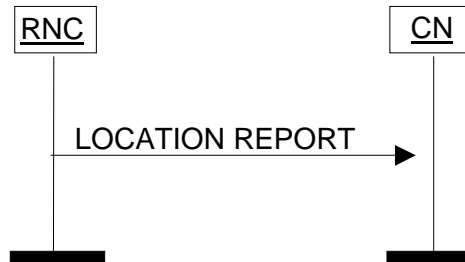
- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 1: 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 RNC can not deliver the location information as requested by the CN, 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 Report Type not supported". ~~If the *Cause* IE is set to "Requested Report Type not supported" the *Request Type* IE shall be included as a reference of what report type is not supported.~~

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request for a geographical area with a specific accuracy, the LOCATION REPORT message shall include either a point with indicated uncertainty or a polygon, which both shall fulfill the requested accuracy as accurately as possible. If, on the other hand, no specific accuracy level was requested in the LOCATION REPORTING CONTROL message, it is up to UTRAN to decide with which accuracy to report.

### 8.20.3 Abnormal Conditions

Not applicable.

### 9.1.30 LOCATION REPORT

This message is sent by the RNC to the CN with information about the UE location.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	ignore
Area Identity	O		9.2.3.10		YES	ignore
Cause	O		9.2.1.4		YES	ignore
Request Type	<del>C</del> ifReqType NSO		9.2.1.16		YES	ignore

Condition	Explanation
ifReqTypeNS	This IE shall be present if the Cause IE is set to "Requested Report Type not supported".

### 9.3.3 PDU Definitions

```
-- *****
--
-- PDU definitions for RANAP.
--
-- *****

RANAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-PDU-Contents (1) }
```

```
DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

**\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.3 NOT SHOWN \*\*\***

```
-- *****
--
-- LOCATION REPORT ELEMENTARY PROCEDURE
--
-- *****

-- *****
--
-- Location Report
--
-- *****

LocationReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {LocationReportIEs} },
    protocolExtensions   ProtocolExtensionContainer { {LocationReportExtensions} }          OPTIONAL,
    ...
}

LocationReportIEs RANAP-PROTOCOL-IES ::= {
    { ID id-AreaIdentity          CRITICALITY ignore TYPE AreaIdentity          PRESENCE optional } |
    { ID id-Cause                 CRITICALITY ignore TYPE Cause                 PRESENCE optional } |
    { ID id-RequestType           CRITICALITY ignore TYPE RequestType          PRESENCE conditionaloptional }
    -- This IE shall be present if the Cause IE is set to "Requested Report Type not supported" -- } ,
    ...
}

LocationReportExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
```



## CHANGE REQUEST

⌘ **25.413** **CR** **378** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Reason for LOCATION REPORT message is not clear.		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-27
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ Rel-4
	<p><i>Use <u>one</u> of the following categories:</i></p> <p><b>F</b> (essential correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (Addition of feature),  <b>C</b> (Functional modification of feature)  <b>D</b> (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p><i>Use <u>one</u> of the following releases:</i></p> <p><b>2</b> (GSM Phase 2)  <b>R96</b> (Release 1996)  <b>R97</b> (Release 1997)  <b>R98</b> (Release 1998)  <b>R99</b> (Release 1999)  <b>REL-4</b> (Release 4)  <b>REL-5</b> (Release 5)</p>

<b>Reason for change:</b>	⌘ If Location Reporting of geographical coordinates at change of Service Area is active and in parallel with this, a request for a Direct Report of geographical coordinates is issued, there is a risk that the CN can't distinguish between the different resulting LOCATION REPORT messages. The case when this will happen is when a LOCATION REPORT at change of Service Area arrives in the CN after the request for a direct report has been sent, but before the answer for this direct report has been received. Since there is no transaction id., the CN can't relate the answers to the correct request. In order to remove this error, it is thus suggested that Request Type is always included in the LOCATION REPORT message when it is sent as an answer to a request for a direct report or at a change of Service Area.
<b>Summary of change:</b>	⌘ The Request Type IE is made optional in the LOCATION REPORT message and procedure text is added to explain that the Report Type IE shall be included when the LOCATION REPORT message is sent as an answer to a request for a direct report or at a change of Service Area.  <u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has isolated impact since the condition for when to include the Request Type IE has been changed. This CR has impact under functional point of view. The impact can be considered isolated because the change affects one function, i.e. Location Reporting function.  Compatibility Analysis towards previous release: This CR is not compatible w.r.t the previous release of the specification, since the condition for when to include the Request Type IE has been changed.
<b>Consequences if</b>	⌘ It will not be possible in all cases to relate a LOCATION REPORT message to

**not approved:** the correct request.

<b>Clauses affected:</b>	⌘	8.20, 9.1.30, 9.3.3		
<b>Other specs affected:</b>	⌘	<input checked="" type="checkbox"/> Other core specifications	⌘	CR377 25.413 V3.7.0
		<input type="checkbox"/> Test specifications		
		<input type="checkbox"/> O&M Specifications		
<b>Other comments:</b>	⌘			

**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](http://www.3gpp.org/3G_Specs/CRs.htm). Below is a brief summary:

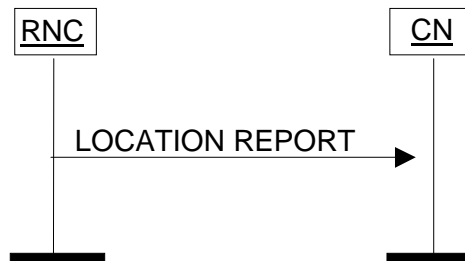
- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://www.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 1: 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 RNC can not deliver the location information as requested by the CN, 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 Report Type not supported". ~~If the *Cause* IE is set to "Requested Report Type not supported" the *Request Type* IE shall be included as a reference of what report type is not supported.~~

If the Location Report procedure was triggered by a LOCATION REPORTING CONTROL message, which included a request for a geographical area with a specific accuracy, the LOCATION REPORT message shall include 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, it is up to UTRAN to decide with which accuracy to report.

### 8.20.3 Abnormal Conditions

Not applicable.

### 9.1.30 LOCATION REPORT

This message is sent by the RNC to the CN with information about the UE location.

Direction: RNC → CN.

Signalling bearer mode: Connection oriented.

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M		9.2.1.1		YES	ignore
Area Identity	O		9.2.3.10		YES	ignore
Cause	O		9.2.1.4		YES	ignore
Request Type	<del>C</del> ifReqType NSO		9.2.1.16		YES	ignore

Condition	Explanation
ifReqTypeNS	This IE shall be present if the Cause IE is set to "Requested Report Type not supported"

### 9.3.3 PDU Definitions

```
-- *****
--
-- PDU definitions for RANAP.
--
-- *****
```

```
RANAP-PDU-Contents {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-PDU-Contents (1) }
```

```
DEFINITIONS AUTOMATIC TAGS ::=
```

```
BEGIN
```

**\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.3 NOT SHOWN \*\*\***

```
-- *****
--
-- LOCATION REPORT ELEMENTARY PROCEDURE
--
-- *****
--
-- *****
--
-- Location Report
--
-- *****
```

```
LocationReport ::= SEQUENCE {
    protocolIEs          ProtocolIE-Container          { {LocationReportIEs} },
    protocolExtensions   ProtocolExtensionContainer { {LocationReportExtensions} }          OPTIONAL,
    ...
}
```

```
LocationReportIEs RANAP-PROTOCOL-IES ::= {
    { ID id-AreaIdentity          CRITICALITY ignore TYPE AreaIdentity          PRESENCE optional } |
    { ID id-Cause                 CRITICALITY ignore TYPE Cause                 PRESENCE optional } |
    { ID id-RequestType           CRITICALITY ignore TYPE RequestType          PRESENCE conditionaloptional } ,
    -- This IE shall be present if the Cause IE is set to "Requested Report Type not supported" --
    ...
}
```

```
LocationReportExtensions RANAP-PROTOCOL-EXTENSION ::= {
    ...
}
```

## CHANGE REQUEST

⌘ **25.413 CR 379** ⌘ ev **1** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Corrections to RRC information containers		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-28
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification)		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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ Changes made by RAN2 on the informatively referenced RRC information that will appear inside the RRC Container will introduce a misalignment between RRC and RANAP. It was agreed by RAN3 to remove the informative references in the semantics description for the RRC Container.
<b>Summary of change:</b>	⌘ The informative referenses to RRC information in the sematics description of the Source RNC to Target RNC Transparent Container and Container and the Target RNC to Source RNC Transparent Container are removed.  Impact analysis  Impact assessment towards the previous version of the specification (same release): This CR has no impact since the change only removes informative references related to the contents of the RRC container.
<b>Consequences if not approved:</b>	⌘ RANAP will informatively refer to non existing RRC information as a result of changes agreed in RAN2.

<b>Clauses affected:</b>	⌘ 9.2.1.28, 9.2.1.30		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ CR380 25.413 4.2.0	
<b>Other comments:</b>	⌘		

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](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.

### 9.2.1.28 Source RNC to Target RNC Transparent Container

*Source RNC to Target RNC Transparent Container* IE is an information element that is produced by source RNC and is transmitted to target RNC. In inter-system relocation the IE is transmitted from external relocation source to target RNC.

This IE is transparent to CN.



IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC Container	M		OCTET STRING	"RRC Information to target RNC" as defined in [10]
Number of Iu Instances	M		INTEGER (1..2)	
Relocation Type	M		9.2.1.23	
Chosen Integrity Protection Algorithm	O		9.2.1.13	Indicates which integrity protection algorithm that has been used by the source RNC.
Integrity Protection Key	O		Bit String (128)	Indicates which integrity protection key that has been used by the source RNC.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of signalling data.
Ciphering Key	O		Bit String (128)	Indicates which ciphering key that has been used by the source RNC for ciphering of signalling data.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of CS user data.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of PS user data.
d-RNTI	C - ifUEnotinvolved		INTEGER (0..1048575)	
Target Cell ID	C - ifUEinvolved		INTEGER (0..268435455)	This information element identifies a cell uniquely within UTRAN and consists of RNC-ID (12 bits) and C-ID (16 bits) as defined in TS 25.401 [3].
<b>RAB TrCH Mapping</b>	O	1 to <maxnoofRABs>		
>RAB ID	M		9.2.1.2	
>RAB Subflow	M	1 to <maxRAB-Subflows>		The RAB Subflows shall be presented in an order that corresponds to the order in which the RBs are presented per RAB in the RRC container included in this IE.
<b>&gt;&gt; Transport Channel IDs</b>				
>>> DCH ID	O		INTEGER (0..255)	The DCH ID is the identifier of an active dedicated transport channel. It is unique for each active DCH among the active DCHs simultaneously allocated for the same UE.
>>> DSCH ID	O		INTEGER (0..255)	The DSCH ID is the identifier of an active downlink shared transport channel. It is unique for each DSCH among the active DSCHs simultaneously allocated for the same UE.
>>> USCH ID	O		INTEGER (0..255)	The USCH ID is the identifier of an active uplink shared transport channel. It is unique

				for each USCH among the active USCHs simultaneously allocated for the same UE.
--	--	--	--	--

Condition	Explanation
IfUEnotinvolved	This IE shall be present if the <i>Relocation type</i> IE is set to "UE not involved in relocation of SRNS".
IfUEinvolved	This IE shall be present if the <i>Relocation type</i> IE is set to "UE involved in relocation of SRNS".

Range bound	Explanation
maxnoofRABs	Maximum no. of RABs for one UE. Value is 256.
maxRABSubflows	Maximum no. of subflows per RAB. Value is 7.

### 9.2.1.30 Target RNC to Source RNC Transparent Container

*Target RNC to Source RNC Transparent Container* IE is an information element that is produced by target RNC and is transmitted to source RNC. In inter-system relocation the IE is transmitted from target RNC to the external relocation source.

This IE is transparent to CN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC Container	M		OCTET STRING	Either "RRC information, target RNC to source RNC" or "RRC Information, target RNC to source system" as defined in [10]
d-RNTI	O		INTEGER (0..1048575)	May be included to allow the triggering of the Relocation Detect procedure from the Iur Interface

## CHANGE REQUEST

⌘ **25.413 CR 380** ⌘ ev **1** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Corrections to RRC information containers		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-28
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification)		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

<b>Reason for change:</b>	⌘ Changes made by RAN2 on the informatively referenced RRC information that will appear inside the RRC Container will introduce a misalignment between RRC and RANAP. It was agreed by RAN3 to remove the informative references in the semantics description for the RRC Container.
<b>Summary of change:</b>	⌘ The informative referenses to RRC information in the sematics description of the Source RNC to Target RNC Transparent Container and Container and the Target RNC to Source RNC Transparent Container are removed.  Impact analysis  Impact assessment towards the previous version of the specification (same release): This CR has no impact since the change only removes informative references related to the contents of the RRC container.
<b>Consequences if not approved:</b>	⌘ RANAP will informatively refer to non existing RRC information as a result of changes agreed in RAN2.

<b>Clauses affected:</b>	⌘ 9.2.1.28, 9.2.1.30		
<b>Other specs affected:</b>	<input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ CR379 25.413 3.7.0,	
<b>Other comments:</b>	⌘		

**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](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.

### 9.2.1.28 Source RNC to Target RNC Transparent Container

*Source RNC to Target RNC Transparent Container* IE is an information element that is produced by source RNC and is transmitted to target RNC. In inter-system relocation the IE is transmitted from external relocation source to target RNC.

This IE is transparent to CN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC Container	M		OCTET STRING	"RRC Information to target RNC" as defined in [10]
Number of Iu Instances	M		INTEGER (1..2)	
Relocation Type	M		9.2.1.23	
Chosen Integrity Protection Algorithm	O		9.2.1.13	Indicates which integrity protection algorithm that has been used by the source RNC.
Integrity Protection Key	O		Bit String (128)	Indicates which integrity protection key that has been used by the source RNC.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of signalling data.
Ciphering Key	O		Bit String (128)	Indicates which ciphering key that has been used by the source RNC for ciphering of signalling data.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of CS user data.
Chosen Encryption Algorithm	O		9.2.1.14	Indicates which algorithm that has been used by the source RNC for ciphering of PS user data.
d-RNTI	C - ifUEnotinvolved		INTEGER (0..1048575)	
Target Cell ID	C - ifUEinvolved		INTEGER (0..268435455)	This information element identifies a cell uniquely within UTRAN and consists of RNC-ID (12 bits) and C-ID (16 bits) as defined in TS 25.401 [3].
<b>RAB TrCH Mapping</b>	O	1 to <maxnoofRABs>		
>RAB ID	M		9.2.1.2	
>RAB Subflow	M	1 to <maxRAB-Subflows>		The RAB Subflows shall be presented in an order that corresponds to the order in which the RBs are presented per RAB in the RRC container included in this IE.
<b>&gt;&gt; Transport Channel IDs</b>				
>>> DCH ID	O		INTEGER (0..255)	The DCH ID is the identifier of an active dedicated transport channel. It is unique for each active DCH among the active DCHs simultaneously allocated for the same UE.
>>> DSCH ID	O		INTEGER (0..255)	The DSCH ID is the identifier of an active downlink shared transport channel. It is unique for each DSCH among the active DSCHs simultaneously allocated for the same UE.
>>> USCH ID	O		INTEGER (0..255)	The USCH ID is the identifier of an active uplink shared transport channel. It is unique

				for each USCH among the active USCHs simultaneously allocated for the same UE.
--	--	--	--	--

Condition	Explanation
IfUEnotinvolved	This IE shall be present if the <i>Relocation type</i> IE is set to "UE not involved in relocation of SRNS".
IfUEinvolved	This IE shall be present if the <i>Relocation type</i> IE is set to "UE involved in relocation of SRNS".

Range bound	Explanation
maxnoofRABs	Maximum no. of RABs for one UE. Value is 256.
maxRABSubflows	Maximum no. of subflows per RAB. Value is 7.



### 9.2.1.30 Target RNC to Source RNC Transparent Container

*Target RNC to Source RNC Transparent Container* IE is an information element that is produced by target RNC and is transmitted to source RNC. In inter-system relocation the IE is transmitted from target RNC to the external relocation source.

This IE is transparent to CN.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
RRC Container	M		OCTET STRING	Either "RRC information, target RNC to source RNC" or "RRC Information, target RNC to source system" as defined in [10]
d-RNTI	O		INTEGER (0..1048575)	May be included to allow the triggering of the Relocation Detect procedure from the Iur Interface

## CHANGE REQUEST

⌘ **25.413** **CR** **382** ⌘ rev      ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Procedure Code Criticality in Error Indication		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-20
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ It is stated in the semantics description for the Procedure Criticality IE within the Criticality Diagnostics IE that the value "Ignore" shall never be used. This was true as long as this IE was only used when reporting an error on procedure code level. But since it is now also used within the ERROR INDICATION message to identify the message being reported, the value "Ignore" must also be allowed.
<b>Summary of change:</b>	⌘ The statement that the value "Ignore" shall never be used for the Procedure Code IE within the Criticality Diagnostics IE is removed.
	<u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has isolated impact because the contradiction between what is stated within the semantics description for the Criticality Diagnostics IE and the description in chapter 10 of the usage of ERROR INDICATION when reporting errors may lead to different implementations. This CR has impact under functional point of view. The impact can be considered isolated because the change only affects one function, i.e. Error Indication.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, there is a contradiction between what is stated within the semantics description for the Criticality Diagnostics IE and the description in chapter 10 of the usage of ERROR INDICATION when reporting errors.

<b>Clauses affected:</b>	⌘ 9.2.1.35		
<b>Other specs</b>	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘	CR383 25.413 4.2.0 CR071 25.419 3.6.0 CR072 25.419 4.2.0 CR508 25.423 3.7.0 CR509 25.423 4.2.0

<b>affected:</b>	<input type="checkbox"/>		CR561 25.433 3.7.0 CR562 25.433 4.2.1 CR012 25.453 5.1.0
	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	O&M Specifications	
<b>Other comments:</b>	⌘		

### 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](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.

### 9.2.1.35 Criticality Diagnostics

The *Criticality Diagnostics* IE is sent by the RNC or the CN when parts of a received message have not been comprehended or were missing, or if the message contained logical errors. When applicable, it contains information about which IEs that were not comprehended or were missing.

For further details on how to use the *Criticality Diagnostics* IE, see Annex A.2.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Criticality Diagnostics</b>				
>Procedure Code	O		INTEGER (0..255)	Procedure Code is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error
>Triggering Message	O		ENUMERATED (initiating message, successful outcome, unsuccessful outcome, outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication procedure.
>Procedure Criticality	O		ENUMERATED (reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure). <del>The value 'ignore' shall never be used.</del>
<b>Information Element Criticality Diagnostics</b>		0 to <maxnoof errors>		
>IE Criticality	M		ENUMERATED (reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value 'ignore' shall not be used.
>IE ID	M		INTEGER (0..65535)	The IE ID of the not understood or missing IE
>Repetition Number	O		INTEGER (0..255)	<p>The <i>Repetition Number</i> IE gives</p> <ul style="list-style-type: none"> <li>in case of a not understood IE: The number of occurrences of the reported IE up to and including the not understood occurrence</li> <li>in case of a missing IE: The number of occurrences up to but not including the missing occurrence.</li> </ul> <p>Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality above them.</p>
>Message Structure	O		9.2.1.42	The <i>Message Structure</i> IE describes the structure where the not understood or missing IE was detected. This IE is included if the not understood IE is not the top level of the message.
>Type of Error	M		ENUMERATED (not understood, missing, ...)	

Range bound	Explanation
maxnooferrors	Maximum no. of IE errors allowed to be reported with a single message. The value for maxnooferrors is 256.

## CHANGE REQUEST

⌘ **25.413** **CR** **383** ⌘ rev      ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Procedure Code Criticality in Error Indication		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 2001-11-20
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
	<i>Use one of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)	

<b>Reason for change:</b>	⌘ It is stated in the semantics description for the Procedure Criticality IE within the Criticality Diagnostics IE that the value "Ignore" shall never be used. This was true as long as this IE was only used when reporting an error on procedure code level. But since it is now also used within the ERROR INDICATION message to identify the message being reported, the value "Ignore" must also be allowed.
<b>Summary of change:</b>	⌘ The statement that the value "Ignore" shall never be used for the Procedure Code IE within the Criticality Diagnostics IE is removed.
	<u>Impact analysis</u>  Impact assessment towards the previous version of the specification (same release): This CR has isolated impact because the contradiction between what is stated within the semantics description for the Criticality Diagnostics IE and the description in chapter 10 of the usage of ERROR INDICATION when reporting errors may lead to different implementations. This CR has impact under functional point of view. The impact can be considered isolated because the change only affects one function, i.e. Error Indication.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, there is a contradiction between what is stated within the semantics description for the Criticality Diagnostics IE and the description in chapter 10 of the usage of ERROR INDICATION when reporting errors.

<b>Clauses affected:</b>	⌘ 9.2.1.35		
<b>Other specs</b>	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘	CR382 25.413 3.7.0 CR071 25.419 3.6.0 CR072 25.419 4.2.0 CR508 25.423 3.7.0 CR509 25.423 4.2.0

<b>affected:</b>	<input type="checkbox"/>		CR561 25.433 3.7.0 CR562 25.433 4.2.1 CR012 25.453 5.1.0
	<input type="checkbox"/>	Test specifications	
	<input type="checkbox"/>	O&M Specifications	
<b>Other comments:</b>	⌘		

### 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](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.



### 9.2.1.35 Criticality Diagnostics

The *Criticality Diagnostics* IE is sent by the RNC or the CN when parts of a received message have not been comprehended or were missing, or if the message contained logical errors. When applicable, it contains information about which IEs that were not comprehended or were missing.

For further details on how to use the *Criticality Diagnostics* IE, see Annex A.2.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Criticality Diagnostics</b>				
>Procedure Code	O		INTEGER (0..255)	Procedure Code is to be used if Criticality Diagnostics is part of Error Indication procedure, and not within the response message of the same procedure that caused the error
>Triggering Message	O		ENUMERATED (initiating message, successful outcome, unsuccessful outcome)	The Triggering Message is used only if the Criticality Diagnostics is part of Error Indication procedure.
>Procedure Criticality	O		ENUMERATED (reject, ignore, notify)	This Procedure Criticality is used for reporting the Criticality of the Triggering message (Procedure). <del>The value 'ignore' shall never be used.</del>
<b>Information Element Criticality Diagnostics</b>		0 to <maxnoof errors>		
>IE Criticality	M		ENUMERATED (reject, ignore, notify)	The IE Criticality is used for reporting the criticality of the triggering IE. The value 'ignore' shall not be used.
>IE ID	M		INTEGER (0..65535)	The IE ID of the not understood or missing IE
>Repetition Number	O		INTEGER (0..255)	<p>The <i>Repetition Number</i> IE gives</p> <ul style="list-style-type: none"> <li>in case of a not understood IE: The number of occurrences of the reported IE up to and including the not understood occurrence</li> <li>in case of a missing IE: The number of occurrences up to but not including the missing occurrence.</li> </ul> <p>Note: All the counted occurrences of the reported IE must have the same topdown hierarchical message structure of IEs with assigned criticality above them.</p>
>Message Structure	O		9.2.1.42	The <i>Message Structure</i> IE describes the structure where the not understood or missing IE was detected. This IE is included if the not understood IE is not the top level of the message.
>Type of Error	M		ENUMERATED (not understood, missing, ...)	

Range bound	Explanation
maxnooferrors	Maximum no. of IE errors allowed to be reported with a single message. The value for maxnooferrors is 256.

## CHANGE REQUEST

⌘ **25.413 CR 385** ⌘ ev **2** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Addition of amendment to clarify the PER encoding of bitstrings		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ November, 2001
<b>Category:</b>	⌘ <b>F</b> Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	<b>Release:</b>	⌘ <b>R99</b> Use <u>one</u> of the following releases: <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ There is a lack of specification w.r.t. PER encoding of bitstrings in X691. A clarification will appear in the 2002 version of X.691, but as RAN3 specifications refer to the 1997 version, this amendment will not automatically apply to RAN3 specifications. Therefore a specific clarification is needed within the RAN3 TSs. For further reasoning, please refer to document R3-013363.
<b>Summary of change:</b>	⌘ A clarification was added to subclause 9.4. Rev.1: a slight rewording of the added note was performed and the reference to X.680 was reformulated. Rev2: tdoc number was added on the cover page.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, RANAP will still refer to an incomplete specification w.r.t. to the PER encoding of bitstrings.  Impact Analysis: Impact assessment towards the previous version of the specification (same release):  This CR has no impact on the previous version of the specification (same release) for implementations aligned with the added clarification. For implementations based otherwise on different assumptions, this CR may have isolated/non isolated impact, depending on the single implementation choices. It must be stated that this interpretation is the assumed one in ITU-T and the clarification was added only for completeness.

<b>Clauses affected:</b>	⌘ 9.4	
<b>Other specs</b>	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ CR 074 SABP R4, CR 570 NBAP R99, CR 073 SABP R99, CR 571 NBAP R4, CR 520 RNSAP R4, CR 519 RNSAP R99, CR 386 RANAP R4, CR 013 PCAP R5

**Affected:**

- 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](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.

## 9.4 Message Transfer Syntax

RANAP shall use the ASN.1 Basic Packed Encoding Rules (BASIC-PER) Aligned Variant as transfer syntax as specified in ref. [13].

The following encoding rules apply in addition to what has been specified in X.691 [13]:

When a bitstring value is placed in a bit-field as specified in 15.6 to 15.11 in [13], the leading bit of the bitstring value shall be placed in the leading bit of the bit-field, and the trailing bit of the bitstring value shall be placed in the trailing bit of the bit-field.

NOTE - When using the "bstring" notation, the leading bit of the bitstring value is on the left, and the trailing bit of the bitstring value is on the right. The term 'leading bit' is to be interpreted as equal to the term 'first bit' defined in [14].

## CHANGE REQUEST

⌘ **25.413 CR 386** ⌘ ev **2** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Addition of amendment to clarify the PER encoding of bitstrings		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ November, 2001
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ There is a lack of specification w.r.t. PER encoding of bitstrings in X691. A clarification will appear in the 2002 version of X.691, but as RAN3 specifications refer to the 1997 version, this amendment will not automatically apply to RAN3 specifications. Therefore a specific clarification is needed within the RAN3 TSs. For further reasoning, please refer to document R3-013363.
<b>Summary of change:</b>	⌘ A clarification was added to subclause 9.4. Rev.1: a slight rewording of the added note was performed and the reference to X.680 was reformulated. Rev2: tdoc number was added on the cover page.
<b>Consequences if not approved:</b>	⌘ If this CR is not approved, RANAP will still refer to an incomplete specification w.r.t. to the PER encoding of bitstrings.  Impact Analysis: Impact assessment towards the previous version of the specification (same release):  This CR has no impact on the previous version of the specification (same release) for implementations aligned with the added clarification. For implementations based otherwise on different assumptions, this CR may have isolated/non isolated impact, depending on the single implementation choices. It must be stated that this interpretation is the assumed one in ITU-T and the clarification was added only for completeness.

<b>Clauses affected:</b>	⌘ 9.4	
<b>Other specs</b>	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ CR 074 SABP R4r2, CR 570 NBAP R99, CR 073 SABP R99, CR 571 NBAP R4, CR 520 RNSAP R4, CR 385 RANAP R99, CR 519 RNSAP R99, CR 013 PCAP R5

**Affected:**

- 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](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.



## 9.4 Message Transfer Syntax

RANAP shall use the ASN.1 Basic Packed Encoding Rules (BASIC-PER) Aligned Variant as transfer syntax as specified in ref. [13].

The following encoding rules apply in addition to what has been specified in X.691 [13]:

When a bitstring value is placed in a bit-field as specified in 15.6 to 15.11 in [13], the leading bit of the bitstring value shall be placed in the leading bit of the bit-field, and the trailing bit of the bitstring value shall be placed in the trailing bit of the bit-field.

NOTE - When using the "bstring" notation, the leading bit of the bitstring value is on the left, and the trailing bit of the bitstring value is on the right. The term 'leading bit' is to be interpreted as equal to the term 'first bit' defined in [14].

## CHANGE REQUEST

⌘ **25.413** **CR 387** ⌘ rev **2** ⌘ Current version: **3.7.0** ⌘

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

<b>Title:</b>	⌘ Chosen Integrity Protection Algorithm IE over MAP/E interface		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 28 November 2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	<i>Use one of the following categories:</i> <b>F</b> (essential correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification)		<i>Use one of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

**Reason for change:** ⌘ Chosen Integrity Protection Algorithm IE is currently mandatory parameter in Security Mode Complete message. It is however not possible to always indicate the Chosen Integrity Protection Algorithm over MAP/E interface when RANAP signalling is used, e.g. in case when an inter-MSC UMTS to UMTS relocation from 3G\_MSC-A to 3G\_MSC-B is performed, after which intra-3G\_MSC-B handover from UMTS to GSM (let's assume the BSC works in A/Gb-mode and obviously BSSAP signalling is used between 3G-MSC-B and BSC) is done before Security Mode Command message has been sent.

Indeed After Security Mode Command message is sent over E/MAP from 3G-MSC-A to 3G-MSC-B, 3G-MSC-B makes necessary conversions between BSSAP signalling and RANAP signalling that is used over MAP/E. It runs Cipher Mode Control procedure towards BSC. Cipher Mode Control procedure contains only encryption information but no integrity protection information. Therefore, when 3G\_MSC-B gets a response back from BSC, it doesn't get any information of integrity protection (naturally) and doesn't know what it should insert to the Chosen Integrity Protection Algorithm IE in Security Mode Complete message over MAP/E.

See attached picture for a better view of the problem.



Picture.doc

Following the discussions during RAN3#22, it is not possible with actual specifications to change the protocol over MAP/E interface after once selected, in other words, the following intra MSC-B handovers do not affect the chosen MAP/E protocol.

Furthermore the discussions in N1/N4 group about Nortel's proposal to change the protocol ended up after the N1 Handover Breakout Meeting on 16th October 2001 (N1-011590) with the decision that there will not be any protocol switching in in MAP/E interface Rel99/Rel4.

**Summary of change:** ⌘ This CR tries to make consistent the situation when MSC-B has to fill in something into Chosen Integrity Protection Algorithm IE over MAP/E interface and it can not say that UIA0 is chosen. Therefore Chosen Integrity Protection Algorithm IE is proposed to be changed to contain a value which indicates that no value is available.

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 the reception of a value for this IE without any corresponding behaviour defined should not cause malfunction within the receiving node. This CR has an impact under protocol & functional point of view.

The impact can be considered isolated because the change only affects RANAP security mode control function.

**Consequences if not approved:** ⌘ In the case that it is not possible to indicate the Chosen Integrity Protection Algorithm over MAP/E interface when RANAP signalling is used, some errors will still happen due to a lack of suitable value for that mandatory element as it is explained above.

**Clauses affected:** ⌘ 2, 9.2.1.13 and 9.3.4

**Other specs affected:** ⌘  Other core specifications ⌘ 25.413 REL-4 v4.2.0, mirror CR388  
 Test specifications  
 O&M Specifications

**Other comments:** ⌘

---

## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply".
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 23.930: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects; Iu Principles".
- [2] 3GPP TS 25.410: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface: General Aspects and Principles".
- [3] 3GPP TS 25.401: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Overall Description".
- [4] 3GPP TR 25.931: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Functions, Examples on Signalling Procedures".
- [5] 3GPP TS 25.412: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface Signalling Transport".
- [6] 3GPP TS 25.415: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface User Plane Protocols".
- [7] 3GPP TS 23.107: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects; QoS Concept and Architecture".
- [8] 3GPP TS 24.008: "3<sup>rd</sup> Generation Partnership Project (3GPP); Mobile radio interface layer 3 specification, Core Network Protocols – Stage 3".
- [9] 3GPP TS 25.414: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Iu Interface Data Transport and Transport Signalling".
- [10] 3GPP TS 25.331: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; RRC Protocol Specification".
- [11] 3GPP TS 08.08: "Mobile services Switching Centre – Base Station System (MSC – BSS) interface".
- [12] 3GPP TS 12.08: "Subscriber and equipment trace".
- [13] X.691 (12/97): "Information Technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [14] X.680, (12/97): "Information Technology - Abstract Syntax Notation One (ASN.1):Specification of basic notation".
- [15] X.681 (12/97): "Information Technology - Abstract Syntax Notation One (ASN.1): Information object specification".
- [16] 3GPP TS 23.110: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects, UMTS Access Stratum, Services and Functions".
- [17] 3GPP TS 25.323: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Packet Data Convergence Protocol (PDCP) Specification".

- [18] 3GPP TS 25.921: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Guidelines and principles for protocol description and error handling".
- [19] 3GPP TS 23.003: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Core Network; Numbering, addressing and identification".
- [20] 3GPP TS 23.032: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Core Network; Universal Geographical Area Description (GAD)".
- [21] 3GPP TS 23.060: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspect; General Packet Radio Service (GPRS); Service description; Stage 2".
- [22] 3GPP TS 29.108: "3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Core Network; Application of the Radio Access Network Application Part (RANAP) on the E-interface".

### 9.2.1.13 Chosen Integrity Protection Algorithm

This element indicates the integrity protection algorithm being used by the RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Chosen Integrity Protection Algorithm	M		INTEGER (standard UIA1 (0), <u>no value (15)</u> )	Value range is 0 to 15. Only one value used. <u>The value "no value"</u> <u>shall only be used in</u> <u>case of RANAP signalling</u> <u>over MAP/E [22].</u>

### 9.3.4 Information Element Definitions

```
-- *****
--
-- Information Element Definitions
--
-- *****
```

```
RANAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-IEs (2) }
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

```
ChosenEncryptionAlgorithm ::= EncryptionAlgorithm
ChosenIntegrityProtectionAlgorithm ::= IntegrityProtectionAlgorithm
CI ::= OCTET STRING (SIZE (2))
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

```
-- I
```

```
IMEI ::= OCTET STRING (SIZE (8))
-- Reference: 23.003
```

```
IMSI ::= TBCD-STRING (SIZE (3..8))
-- Reference: 23.003
```

```
IntegrityProtectionAlgorithm ::= INTEGER {
  standard-UMTS-integrity-algorithm-UIA1 (0),
  no-value (15)
} (0..15)
```

```
IntegrityProtectionInformation ::= SEQUENCE {
  permittedAlgorithms PermittedIntegrityProtectionAlgorithms,
  key IntegrityProtectionKey,
  iE-Extensions ProtocolExtensionContainer { {IntegrityProtectionInformation-ExtIEs} }
OPTIONAL
}
```

```
IntegrityProtectionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
  ...
}
```

```
IntegrityProtectionKey ::= BIT STRING (SIZE (128))
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

## CHANGE REQUEST

⌘ **25.413** **CR 388** ⌘ rev **2** ⌘ Current version: **4.2.0** ⌘

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:** ⌘ Chosen Integrity Protection Algorithm IE over MAP/E interface  
**Source:** ⌘ R-WG3  
**Work item code:** ⌘ TEI **Date:** ⌘ 28 November 2001  
**Category:** ⌘ **A** **Release:** ⌘ REL-4

Use one of the following categories:

- F** (essential correction)
- A** (corresponds to a correction in an earlier release)
- B** (Addition of feature),
- C** (Functional modification of feature)
- D** (Editorial modification)

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

- 2** (GSM Phase 2)
- R96** (Release 1996)
- R97** (Release 1997)
- R98** (Release 1998)
- R99** (Release 1999)
- REL-4** (Release 4)
- REL-5** (Release 5)

**Reason for change:** ⌘ Chosen Integrity Protection Algorithm IE is currently mandatory parameter in Security Mode Complete message. It is however not possible to always indicate the Chosen Integrity Protection Algorithm over MAP/E interface when RANAP signalling is used, e.g. in case when an inter-MSC UMTS to UMTS relocation from 3G\_MSC-A to 3G\_MSC-B is performed, after which intra-3G\_MSC-B handover from UMTS to GSM (let's assume the BSC works in A/Gb-mode and obviously BSSAP signalling is used between 3G-MSC-B and BSC) is done before Security Mode Command message has been sent. Indeed After Security Mode Command message is sent over E/MAP from 3G-MSC-A to 3G-MSC-B, 3G-MSC-B makes necessary conversions between BSSAP signalling and RANAP signalling that is used over MAP/E. It runs Cipher Mode Control procedure towards BSC. Cipher Mode Control procedure contains only encryption information but no integrity protection information. Therefore, when 3G\_MSC-B gets a response back from BSC, it doesn't get any information of integrity protection (naturally) and doesn't know what it should insert to the Chosen Integrity Protection Algorithm IE in Security Mode Complete message over MAP/E.

See attached picture for a better view of the problem.



Picture.doc

Following the discussions during RAN3#22, it is not possible with actual specifications to change the protocol over MAP/E interface after once selected, in other words, the following intra MSC-B handovers do not affect the chosen MAP/E protocol.

Furthermore the discussions in N1/N4 group about Nortel's proposal to change the protocol ended up after the N1 Handover Breakout Meeting on 16th October 2001 (N1-011590) with the decision that there will not be any protocol switching in in MAP/E interface Rel99/Rel4.



**Summary of change:** ⌘ This CR tries to make consistent the situation when MSC-B has to fill in something into Chosen Integrity Protection Algorithm IE over MAP/E interface and it can not say that UIA0 is chosen. Therefore Chosen Integrity Protection Algorithm IE is proposed to be changed to contain a value which indicates that no value is available.

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 the reception of a value for this IE without any corresponding behaviour defined should not cause malfunction within the receiving node. This CR has an impact under protocol & functional point of view.

The impact can be considered isolated because the change only affects RANAP security mode control function.

**Consequences if not approved:** ⌘ In the case that it is not possible to indicate the Chosen Integrity Protection Algorithm over MAP/E interface when RANAP signalling is used, some errors will still happen due to a lack of suitable value for that mandatory element as it is explained above.

**Clauses affected:** ⌘ 2, 9.2.1.13 and 9.3.4

**Other specs affected:** ⌘  Other core specifications ⌘ 25.413 R99 v3.7.0, initial CR387  
 Test specifications  
 O&M Specifications

**Other comments:** ⌘

---

## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply".
- For a non-specific reference, the latest version applies".

- [1] 3GPP TR 23.930: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects; Iu Principles".
- [2] 3GPP TS 25.410: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface: General Aspects and Principles".
- [3] 3GPP TS 25.401: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Overall Description".
- [4] 3GPP TR 25.931: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Functions, Examples on Signalling Procedures".
- [5] 3GPP TS 25.412: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface Signalling Transport".
- [6] 3GPP TS 25.415: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; UTRAN Iu Interface User Plane Protocols".
- [7] 3GPP TS 23.107: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects; QoS Concept and Architecture".
- [8] 3GPP TS 24.008: "3<sup>rd</sup> Generation Partnership Project (3GPP); Mobile radio interface layer 3 specification, Core Network Protocols – Stage 3".
- [9] 3GPP TS 25.414: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Iu Interface Data Transport and Transport Signalling".
- [10] 3GPP TS 25.331: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; RRC Protocol Specification".
- [11] 3GPP TS 08.08: "Mobile services Switching Centre – Base Station System (MSC – BSS) interface".
- [12] 3GPP TS 12.08: "Subscriber and equipment trace".
- [13] X.691 (12/97): "Information Technology - ASN.1 encoding rules - Specification of Packed Encoding Rules (PER)".
- [14] X.680, (12/97): "Information Technology - Abstract Syntax Notation One (ASN.1):Specification of basic notation".
- [15] X.681 (12/97): "Information Technology - Abstract Syntax Notation One (ASN.1): Information object specification".
- [16] 3GPP TS 23.110: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspects, UMTS Access Stratum, Services and Functions".
- [17] 3GPP TS 25.323: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Packet Data Convergence Protocol (PDCP) Specification".
- [18] 3GPP TS 25.921: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network; Guidelines and principles for protocol description and error handling".

- [19] 3GPP TS 23.003: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Core Network; Numbering, addressing and identification".
- [20] 3GPP TS 23.032: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Core Network; Universal Geographical Area Description (GAD)".
- [21] 3GPP TS 23.060: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Services and System Aspect; General Packet Radio Service (GPRS); Service description; Stage 2".
- [22] 3GPP TS 24.080: "3<sup>rd</sup> Generation Partnership Project (3GPP) Technical Specification Group Core Network; Mobile radio interface layer 3 supplementary services specification; Formats and coding".
- [23] 3GPP TS 29.108: "3<sup>rd</sup> Generation Partnership Project; Technical Specification Group Core Network; Application of the Radio Access Network Application Part (RANAP) on the E-interface".

### 9.2.1.13 Chosen Integrity Protection Algorithm

This element indicates the integrity protection algorithm being used by the RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Chosen Integrity Protection Algorithm	M		INTEGER (standard UIA1 (0), <u>no value (15)</u> )	Value range is 0 to 15. Only one value used. <u>The value "no value"</u> <u>shall only be used in</u> <u>case of RANAP signalling</u> <u>over MAP/E [23].</u>

### 9.3.4 Information Element Definitions

```
-- *****
--
-- Information Element Definitions
--
-- *****
```

```
RANAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-IEs (2) }
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

```
ChosenEncryptionAlgorithm ::= EncryptionAlgorithm
ChosenIntegrityProtectionAlgorithm ::= IntegrityProtectionAlgorithm
CI ::= OCTET STRING (SIZE (2))
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

```
-- I
```

```
IMEI ::= OCTET STRING (SIZE (8))
-- Reference: 23.003
```

```
IMSI ::= TBCD-STRING (SIZE (3..8))
-- Reference: 23.003
```

```
IntegrityProtectionAlgorithm ::= INTEGER {
standard-UMTS-integrity-algorithm-UIA1 (0),
no-value (15)
-} (0..15)
```

```
IntegrityProtectionInformation ::= SEQUENCE {
permittedAlgorithms PermittedIntegrityProtectionAlgorithms,
key IntegrityProtectionKey,
iE-Extensions ProtocolExtensionContainer { {IntegrityProtectionInformation-ExtIEs} }
OPTIONAL
}
```

```
IntegrityProtectionInformation-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
...
}
```

```
IntegrityProtectionKey ::= BIT STRING (SIZE (128))
```

**\*\*\*\* LOTS OF UNAFFECTED ASN.1 DESCRIPTION FROM SECTION 9.3.4 REMOVED \*\*\*\***

3GPP TSG-RAN WG3 Meeting #25  
 Makuhari, Japan, 26<sup>th</sup> – 30<sup>th</sup> November, 2001

**Tdoc R3-013105**  
 Revision of Tdoc R3-012887

CR-Form-v4	
<b>CHANGE REQUEST</b>	
⌘ <b>25.413</b> <b>CR 389</b> ⌘ rev <b>-</b> ⌘	Current version: <b>3.7.0</b> ⌘

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

<b>Title:</b>	⌘ Rapporteurs corrections: removal of MNC/MCC		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 20 November 2001
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ R99
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	<b>F</b> (correction)	<b>R96</b> (Release 1996)	<b>2</b> (GSM Phase 2)
	<b>A</b> (corresponds to a correction in an earlier release)	<b>R97</b> (Release 1997)	
	<b>B</b> (addition of feature),	<b>R98</b> (Release 1998)	
	<b>C</b> (functional modification of feature)	<b>R99</b> (Release 1999)	
	<b>D</b> (editorial modification)	<b>REL-4</b> (Release 4)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	<b>REL-5</b> (Release 5)	

<b>Reason for change:</b>	⌘ R3-99k37 Iu Report of RAN3#9 meeting (Paris, France, 6-10 December 1999 !), said that the MCC and MNC can be removed: <i>"Tdoc J62 "Coding of IMSI, MCC, MNC, PLMN-ID, IMEI" was presented by Anders Molander of Ericsson. It was agreed that MCC and MNC can be removed as a standalone types, because they are only used in PLMN-ID which is three octets."</i> R3-99j95: Coding of IMSI, PLMN-ID, IMEI proposed to remove the MCC and MNC. But the version 3.0.0 of RANAP kept the MCC and MNC by mistake.
<b>Summary of change:</b>	⌘ remove the ASN.1 Information Element Definitions of MCC and MNC.  Impact assessment towards the previous version of the specification (same release): This CR has no impact with the previous version of the specification (same release).
<b>Consequences if not approved:</b>	⌘ RANAP specifications will still keep obsolete ASN.1 information that should normally been removed almost two years ago.

<b>Clauses affected:</b>	⌘ 9.3.4	
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ TS 25.413 v420 Rel-4, Tdoc R3-013106 CR390
	<input type="checkbox"/> Test specifications	
	<input type="checkbox"/> O&M Specifications	
<b>Other comments:</b>	⌘ Other sections where MNC and MCC are mentioned (PLMN-ID semantics description) are listed also below for readers convenience.	

## 9.2.1.24 Source ID

*Source ID* IE identifies the source for the relocation of SRNS. The Source ID may be e.g. Source RNC-ID (for UMTS-UMTS relocation) or the SAI of the relocation source (in case of UMTS to GSM relocation).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice <b>Source ID</b>				
> <b>Source RNC-ID</b>				
>>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>>RNC-ID	M		INTEGER (0..4095)	
>SAI			9.2.3.9	

## 9.2.1.39 Global RNC-ID

Global RNC-ID is used to globally identify an RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Global RNC-ID</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>RNC-ID	M		INTEGER (0..4095)	



## 9.2.3.6 LAI

This element is used to uniquely identify a Location Area.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>LAI</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed.

## 9.2.3.9 SAI

*Service Area Identifier (SAI)* IE information (see ref. [3]) is used to identify an area consisting of one or more cells belonging to the same Location Area. Such an area is called a Service Area and can be used for indicating the location of a UE to the CN. For this protocol, only a Service Area that is defined to be applicable to the PS and CS domains shall be used.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SAI</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed.
>SAC	M		OCTET STRING (2)	

### 9.3.4 Information Element Definitions

```
-- *****
--
-- Information Element Definitions
--
-- *****

RANAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN
```

Lots of unaffected ASN1 in 9.3.4 not shown

```
-- M

MaxBitrate ::= INTEGER (1..16000000)
-- Unit is bits per sec

MaxSDU-Size ::= INTEGER (0..32768)
-- MaxSDU-Size
-- Unit is bit

MCC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

MNC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

-- N
```

Lots of unaffected ASN1 in 9.3.4 not shown

3GPP TSG-RAN WG3 Meeting #25  
 Makuhari, Japan, 26<sup>th</sup> – 30<sup>th</sup> November, 2001

**Tdoc R3-013106**  
 Revision of Tdoc R3-012888

CR-Form-v4

## CHANGE REQUEST

⌘ **25.413** **CR 390** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

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

<b>Title:</b>	⌘ Rapporteurs corrections: removal of MNC/MCC		
<b>Source:</b>	⌘ R-WG3		
<b>Work item code:</b>	⌘ TEI	<b>Date:</b>	⌘ 20 November 2001
<b>Category:</b>	⌘ <b>A</b>	<b>Release:</b>	⌘ REL-4
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (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)

<b>Reason for change:</b>	⌘ R3-99k37 Iu Report of #9 meeting (Paris, France, 6-10 December 1999 !), said that the MCC and MNC can be removed: <i>"Tdoc J62 "Coding of IMSI, MCC, MNC, PLMN-ID, IMEI" was presented by Anders Molander of Ericsson. It was agreed that MCC and MNC can be removed as a standalone types, because they are only used in PLMN-ID which is three octets."</i> R3-99j95: Coding of IMSI, PLMN-ID, IMEI proposed to remove the MCC and MNC. But the version 3.0.0 of RANAP kept the MCC and MNC by mistake.
<b>Summary of change:</b>	⌘ remove the ASN:1 Information Element Definitions of MCC and MNC.
<b>Consequences if not approved:</b>	⌘ RANAP specifications will still keep obsolete ASN.1 information that should normally been removed almost two years ago.

<b>Clauses affected:</b>	⌘ 9.3.4		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	TS 25.413 v370 Rel99, Tdoc R3-013105 CR389
<b>Other comments:</b>	⌘ Other sections where MNC and MCC are mentioned (PLMN-ID semantics description) are listed also below for readers convenience.		

## 9.2.1.24 Source ID

*Source ID* IE identifies the source for the relocation of SRNS. The Source ID may be e.g. Source RNC-ID (for UMTS-UMTS relocation) or the SAI of the relocation source (in case of UMTS to GSM relocation).

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice <b>Source ID</b>				
> <b>Source RNC-ID</b>				
>>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>>RNC-ID	M		INTEGER (0..4095)	
>SAI			9.2.3.9	

## 9.2.1.39 Global RNC-ID

Global RNC-ID is used to globally identify an RNC.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>Global RNC-ID</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>RNC-ID	M		INTEGER (0..4095)	

## 9.2.3.6 LAI

This element is used to uniquely identify a Location Area.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>LAI</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed.

## 9.2.3.9 SAI

*Service Area Identifier (SAI)* IE information (see ref. [3]) is used to identify an area consisting of one or more cells belonging to the same Location Area. Such an area is called a Service Area and can be used for indicating the location of a UE to the CN. For this protocol, only a Service Area that is defined to be applicable to the PS and CS domains shall be used.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
<b>SAI</b>				
>PLMN identity	M		OCTET STRING (SIZE (3))	<ul style="list-style-type: none"> <li>- digits 0 to 9, two digits per octet,</li> <li>- each digit encoded 0000 to 1001,</li> <li>- 1111 used as filler</li> <li>- bit 4 to 1 of octet n encoding digit 2n-1</li> <li>- bit 8 to 5 of octet n encoding digit 2n</li> </ul> <p>-The PLMN identity consists of 3 digits from MCC followed by either</p> <ul style="list-style-type: none"> <li>-a filler plus 2 digits from MNC (in case of 2 digit MNC) or</li> <li>-3 digits from MNC (in case of a 3 digit MNC).</li> </ul>
>LAC	M		OCTET STRING (2)	0000 and FFFE not allowed.
>SAC	M		OCTET STRING (2)	



### 9.3.4 Information Element Definitions

```
-- *****
--
-- Information Element Definitions
--
-- *****

RANAP-IEs {
itu-t (0) identified-organization (4) etsi (0) mobileDomain (0)
umts-Access (20) modules (3) ranap (0) version1 (1) ranap-IEs (2) }

DEFINITIONS AUTOMATIC TAGS ::=

BEGIN
```

Lots of unaffected ASN1 in 9.3.4 not shown

```
-- M

MaxBitrate ::= INTEGER (1..16000000)
-- Unit is bits per sec

MaxSDU-Size ::= INTEGER (0..32768)
-- MaxSDU-Size
-- Unit is bit

MCC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

MNC ::= TBCD-STRING (SIZE (2))
-- Reference: 24.008

-- N
```

Lots of unaffected ASN1 in 9.3.4 not shown