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

TSGRP#14(01) 0871

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-010871	R3-013522	25.413	367	1	Rel-4	Correction to Release 4 additions in Iu to support new positioning methods	F	4.2.0	4.3.0	TEI
RP-010871	R3-013119	25.413	372		Rel-4	Chapter A.2.1 (EXAMPLE MESSAGE Layout) missing in version 4.2.0	F	4.2.0	4.3.0	TEI
RP-010871	R3-013401	25.413	373	1	Rel-4	N-to-M relation between CN and UTRAN impacts on CN initiated Reset Resource procedure	F	4.2.0	4.3.0	TEI
RP-010871	R3-013525	25.413	363	1	Rel-4	Cause value for not accepted relocation request	B	4.2.0	4.3.0	TEI
RP-010871	R3-013123	25.413	374		Rel-4	Stop Direct Report	B	4.2.0	4.3.0	TEI
RP-010871	R3-013564	25.413	397	1	Rel-4	Correction to LCS Vertical Accurancy	F	4.2.0	4.3.0	TEI
RP-010871	R3-013563	25.413	384	1	Rel-4	MCC implementation CR for corrections to Release 4 additions in Iu to support new positioning methods.	F	4.2.0	4.3.0	TEI

3GPP TSG-RAN3 Meeting #25
Makuhari, Japan, 26th – 30th November, 2001

Tdoc R3-013525

CR-Form-v3

CHANGE REQUEST

⌘ **25.413** **CR** **363** ⌘ 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 **X** Core Network **X**

Title:	⌘	Cause value for not accepted relocation request.
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	2001-11-27
Category:	⌘	**B**
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:
If operator A allows subscribers belonging to operator B to use some, but not all cells within operator A's network, it must be possible to stop subscribers from operator B to be handed over to the forbidden cells in operator A's network. If the check, that subscribers from operator B are not handed over to the forbidden cells (e.g. based on IMSI), is placed in the target RNC, a cause value to indicate this reason for not accepting the relocation request needs to be included in RANAP.
This cause value can also be used when a relocation to a cell is not accepted since the cell is reserved for operator use.

Summary of change: ⌘ A new cause value is added to RANAP: Relocation target not allowed.

Consequences if not approved: ⌘ An appropriate cause value for the situation described above is missing.

Impact analysis

Impact assessment towards the previous version of the specification (same release):
This CR has isolated impact because the reception of an unknown cause value should not cause malfunction within the receiving node.
The impact can be considered isolated because the change affects one function, i.e. the relocation function

Compatibility Analysis towards previous release:
This CR is compatible because the reception of an unknown cause value should not cause malfunction within the receiving node.

Clauses affected: ⌘ 8.6.3, 9.2.1.4, 9.3.4

Other specs affected: ⌘ ☐ Other core specifications ⌘
☐ Test specifications

	☐ O&M Specifications	
Other comments:	⌘	

How to create CRs using this form:

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://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.

8.6 Relocation Preparation

8.6.1 General

The purpose of the Relocation Preparation procedure is to prepare relocation of SRNS either with involving UE or without involving UE. The relocation procedure shall be co-ordinated in all Iu signalling connections existing for the UE in order to allow Relocation co-ordination in the target RNC. The procedure uses connection oriented signalling.

The source RNC shall not initiate the Relocation Preparation procedure for an Iu signalling connection if a Prepared Relocation exists in the RNC for that Iu signalling connection or if a Relocation Preparation procedure is ongoing for that Iu signalling connection.

8.6.2 Successful Operation

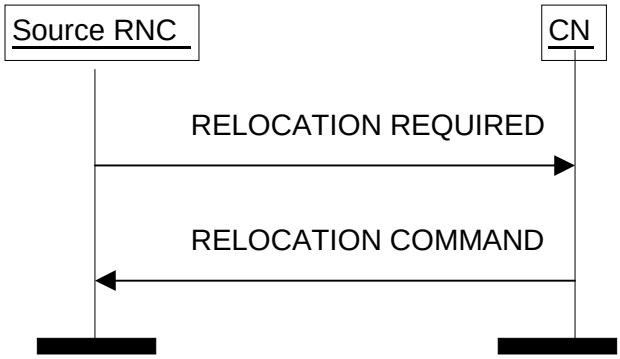

Figure 1: Relocation Preparation procedure. Successful operation.

The source RNC shall initiate the procedure by generating RELOCATION REQUIRED message. The source RNC shall decide whether to initiate the intra-system Relocation or the inter-system Relocation. In case of intra-system Relocation the source RNC shall indicate in the *Source ID* IE the RNC-ID of the source RNC and in the *Target ID* IE the RNC-ID of the target RNC. In case of inter-system Relocation the source RNC shall indicate in the *Source ID* IE the Service Area Identifier and in the *Target ID* IE the cell global identity of the cell in the target system. The source RNC shall indicate the appropriate cause value for the Relocation in the *Cause* IE. Typical cause values are "Time critical Relocation", "Resource optimisation relocation", "Relocation desirable for radio reasons" , "Directed Retry".

The source RNC shall determine whether the relocation of SRNS shall be executed with or without involvement of UE. The source RNC shall set the *Relocation Type* IE accordingly to "UE involved in relocation of SRNS " or "UE not involved in relocation of SRNS ".

In case of intra-system Relocation, the source RNC shall include in the RELOCATION REQUIRED message the *Source RNC to Target RNC Transparent Container* IE. This container shall include the *Relocation Type* IE and the number of Iu signalling connections existing for the UE by setting correctly the *Number of Iu Instances* IE . If available, this container shall further include the *Chosen Integrity Protection Algorithm* IE and the *Integrity Protection Key* IE. If ciphering is active, this container shall include, for ciphering information of signalling data, the *Chosen Encryption Algorithm* IE and the *Ciphering Key* IE, for ciphering information of CS user data the *Chosen Encryption Algorithm CS* IE and for ciphering information of PS user data the *Chosen Encryption Algorithm PS* IE. This container shall include the *RRC Container* IE. If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS" and the UE is using DCH(s), DSCH(s) or USCH(s), the *Source RNC to Target RNC Transparent Container* IE shall include the mapping between each RAB subflow and transport channel identifier(s), i.e. if the RAB is carried on a DCH(s), the DCH ID(s) shall be included, and when it is carried on DSCH(s) or USCH(s), the DSCH ID(s) or USCH ID(s) respectively shall be included. If the *Relocation Type* IE is set to "UE not involved in relocation of SRNS", the *d-RNTI* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE. If the *Relocation Type* IE is set to "UE involved in relocation of SRNS", the *Target Cell ID* IE shall be included in the *Source RNC to Target RNC Transparent Container* IE.

In case of intersystem handover to GSM the RNC:

- shall include *MS Classmark 2* and *MS Classmark 3* IEs received from the UE in the RELOCATION REQUIRED message to the CN.

- shall include the *Old BSS to New BSS* IE within the RELOCATION REQUIRED message only if the information is available.

The source RNC shall send the RELOCATION REQUIRED message to the CN and the source RNC shall start the timer $T_{RELOCprep.}$

When the preparation including resource allocation in the target system is ready and the CN has decided to continue the relocation of SRNS, the CN shall send RELOCATION COMMAND message to the source RNC and the CN shall start the timer $T_{RELOCcomplete}$.

If the *Target RNC To Source RNC Transparent Container* IE or the *L3 information* IE is received by the CN from the relocation target, it shall be included in the RELOCATION COMMAND message.

For each RAB successfully established in the target system and originating from the PS domain, the RELOCATION COMMAND message shall contain Iu transport address and Iu transport association to be used for the forwarding of the DL N-PDU duplicates towards the relocation target. Upon reception of the RELOCATION COMMAND message from the PS domain, the source RNC shall start the timer $T_{DATAfwd.}$

The Relocation Preparation procedure is terminated in the CN by transmission of RELOCATION COMMAND message.

If the target system (including target CN) does not support all existing RABs, the RELOCATION COMMAND message shall contain a list of RABs indicating all the RABs that are not supported by the target system. This list is contained in the *RABs to Be Released* IE. The source RNC may use this information e.g. to decide if to cancel the relocation or not. The resources associated with these not supported RABs shall not be released until the relocation is completed. This is in order to make a return to the old configuration possible in case of a failed or cancelled relocation.

Upon reception of RELOCATION COMMAND message the source RNC shall stop the timer $T_{RELOCprep}$, RNC shall start the timer $T_{RELOCOverall}$ and RNC shall terminate the Relocation Preparation procedure. The source RNC is then defined to have a Prepared Relocation for that Iu signalling connection.

When Relocation Preparation procedure is terminated successfully and when the source RNC is ready, the source RNC should trigger the execution of relocation of SRNS.

Interactions with other procedures:

If, after RELOCATION REQUIRED message is sent and before the Relocation Preparation procedure is terminated, the source RNC receives a RANAP message initiating an other connection oriented RANAP class 1 or class 3 procedure (except IU RELEASE COMMAND message, which shall be handled normally) via the same Iu signalling connection, the source RNC shall either:

1. cancel the Relocation Preparation procedure i.e. execute Relocation Cancel procedure with an appropriate value for the *Cause* IE, e.g. "Interaction with other procedure", and after successful completion of Relocation Cancel procedure, the source RNC shall continue the initiated RANAP procedure;

or

2. terminate the initiated RANAP procedure without any changes in UTRAN by sending appropriate response message with the cause value “Relocation Triggered” to the CN. The source RNC shall then continue the relocation of SRNS.

If during the Relocation Preparation procedure the source RNC receives a DIRECT TRANSFER message it shall be handled normally.

If during the Relocation Preparation procedure the source RNC receives connection oriented RANAP class 2 messages (with the exception of DIRECT TRANSFER message) it shall decide to either execute the procedure immediately or suspend it. In the case the relocation is cancelled the RNC shall resume any suspended procedures (if any).

After Relocation Preparation procedure is terminated successfully, all RANAP messages (except IU RELEASE COMMAND message, which shall be handled normally) received via the same Iu signalling bearer shall be ignored by the source RNC.

8.6.3 Unsuccessful Operation

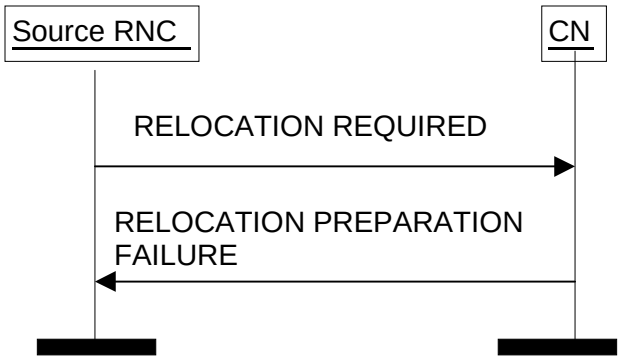

Figure 2: Relocation Preparation procedure. Unsuccessful operation.

If the CN or target system is not able to even partially accept the relocation of SRNS or a failure occurs during the Relocation Preparation procedure in the CN or the CN decides not to continue the relocation of SRNS, the CN shall send RELOCATION PREPARATION FAILURE message to the source RNC.

RELOCATION PREPARATION FAILURE message shall contain appropriate value for the *Cause* IE e.g. "$T_{RELOCalloc}$ expiry", "Relocation Failure in Target CN/RNC or Target System"., "Relocation not supported in Target RNC or Target System", "Relocation Target not allowed".

Transmission of RELOCATION PREPARATION FAILURE message terminates the procedure in the CN. Reception of RELOCATION PREPARATION FAILURE message terminates the procedure in UTRAN.

When the Relocation Preparation procedure is unsuccessfully terminated, the existing Iu signalling connection can be used normally.

If the Relocation Preparation procedure is terminated unsuccessfully, the CN shall release the possibly existing Iu signalling connection for the same UE and related to the same relocation of SRNS towards the target RNC by initiating Iu Release procedure towards the target RNC with an appropriate value for the *Cause* IE, e.g. "Relocation Cancelled".

Interactions with Relocation Cancel procedure:

If there is no response from the CN to the RELOCATION REQUIRED message before timer $T_{RELOCprep}$ expires in the source RNC, the source RNC shall cancel the Relocation Preparation procedure by initiating the Relocation Cancel procedure with appropriate value for the *Cause* IE, e.g. "$T_{RELOCprep}$ expiry".

8.6.4 Abnormal Conditions

If the target RNC, which was indicated in the RELOCATION REQUIRED message, is not known to the CN:

1. The CN shall reject the relocation of SRNS by sending a RELOCATION PREPARATION FAILURE message to the source RNC with *Cause* IE set to "Unknown target RNC".

2. The CN shall continue to use the existing Iu connection towards the source RNC.

8.6.5 Co-ordination of Two Iu Signalling Connections

If the RNC has decided to initiate Relocation Preparation procedure for a UTRAN to UTRAN relocation, the RNC shall initiate simultaneously Relocation Preparation procedure on all Iu signalling connections existing for the UE.

For intersystem handover to GSM, Relocation Preparation procedure shall be initiated only towards the circuit switched CN.

The source RNC shall not trigger the execution of relocation of SRNS unless it has received RELOCATION COMMAND message from all Iu signalling connections for which the Relocation Preparation procedure has been initiated.

If the source RNC receives RELOCATION PREPARATION FAILURE message from the CN, the RNC shall initiate Relocation Cancel procedure on the other Iu signalling connection for the UE if the other Iu signalling connection exists and if the Relocation Preparation procedure is still ongoing or the procedure has terminated successfully in that Iu signalling connection.

9.2.1.4 Cause

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

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

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			Requested Maximum Bit Rate not Available(20), Requested Maximum Bit Rate for DL not Available(33), Requested Maximum Bit Rate for UL not Available(34), Requested Guaranteed Bit Rate not Available(21), Requested Guaranteed Bit Rate for DL not Available(35), Requested Guaranteed Bit Rate for UL not Available(36), Requested Transfer Delay not Achievable(22), Invalid RAB Parameters Combination(23), Condition Violation for SDU Parameters(24), Condition Violation for Traffic Handling Priority(25), Condition Violation for Guaranteed Bit Rate(26), User Plane Versions not Supported(27), Iu UP Failure(28), TRELOCalloc Expiry (7), Relocation Failure in Target CN/RNC or Target System (29), Invalid RAB	

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
			ID(30), No remaining RAB(31), Interaction with other procedure(32), Repeated Integrity Checking Failure(37), Requested Report Type not supported(38), Request superseded(39), Release due to UE generated signalling connection release(40), Resource Optimisation Relocation(41), Requested Information Not Available(42), Relocation desirable for radio reasons (43), Relocation not supported in Target RNC or Target system(44), Directed Retry (45), Radio Connection With UE Lost(46) …, RNC unable to establish all RFCs (47) , Deciphering Keys Not Available(48), Dedicated Assistance data Not Available(49), Relocation Target not allowed(50))	

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
>Transport Layer Cause			INTEGER (Signalling Transport Resource Failure(65), Iu Transport Connection Failed to Establish(66), …)	Value range is 65 – 80.
>NAS Cause			INTEGER (User Restriction Start Indication(81), User Restriction End Indication(82), Normal Release(83), …)	Value range is 81 – 96.
>Protocol Cause			INTEGER (Transfer Syntax Error(97), Semantic Error (98), Message not compatible with receiver state (99), Abstract Syntax Error (Reject) (100), Abstract Syntax Error (Ignore and Notify) (101), Abstract Syntax Error (Falsely Constructed Message) (102), …)	Value range is 97 – 112.
>Miscellaneous Cause			INTEGER (O&M Intervention(113), No Resource Available(114), Unspecified Failure(115), Network Optimisation(116), …)	Value range is 113 – 128.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Choice **Cause**				
>Non-standard Cause			INTEGER (…)	Value range is 129 – 256.

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

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

Available	available.
Requested Transfer Delay Not Achievable	The action failed because requested transfer delay is not achievable.
Resource Optimisation Relocation	The reason for requesting relocation is resource optimisation.
Successful Relocation	The reason for the action is completion of successful relocation.
Time Critical Relocation	Relocation is requested for time critical reason.
$T_{QUEUING}$ Expiry	The action failed due to expiry of the timer $T_{QUEUING}$.
$T_{RELOCalloc}$ Expiry	Relocation Resource Allocation procedure failed due to expiry of the timer $T_{RELOCalloc}$.
$T_{RELOCcomplete}$ Expiry	The reason for the action is expiry of timer $T_{RELOCcomplete}$.
$T_{RELOCoverall}$ Expiry	The reason for the action is expiry of timer $T_{RELOCoverall}$.
$T_{RELOCprep}$ Expiry	Relocation Preparation procedure is cancelled when timer $T_{RELOCprep}$ expires.
Unable To Establish During Relocation	RAB failed to establish during relocation because it cannot be supported in the target RNC.
Unknown Target RNC	Relocation rejected because the target RNC is not known to the CN.
User Inactivity	The action is requested due to user inactivity.
User Plane Versions Not Supported	The action failed because requested user plane versions were not supported.
RNC unable to establish all RFCs	RNC couldn't establish all RAB subflow combinations indicated within the *RAB Parameters* IE.

Transport Layer cause	**Meaning**
Iu Transport Connection Failed to Establish	The action failed because the Iu Transport Network Layer connection could not be established.
Signalling Transport Resource Failure	Signalling transport resources have failed *(e.g. processor reset).*

NAS cause	**Meaning**
Normal Release	The release is normal.
User Restriction Start Indication	A location report is generated due to entering a classified area set by O&M.
User Restriction End Indication	A location report is generated due to leaving a classified area set by O&M.

Protocol cause	**Meaning**
Abstract Syntax Error (Reject)	The received message included an abstract syntax error and the concerning criticality indicated "reject".
Abstract Syntax Error (Ignore And Notify)	The received message included an abstract syntax error and the concerning criticality indicated "ignore and notify".
Abstract Syntax Error (Falsely Constructed Message)	The received message contained IEs or IE groups in wrong order or with too many occurrences.
Message Not Compatible With Receiver State	The received message was not compatible with the receiver state.
Semantic Error	The received message included a semantic error.
Transfer Syntax Error	The received message included a transfer syntax error.

Miscellaneous cause	**Meaning**
Network Optimisation	The action is performed for network optimisation.
No Resource Available	No requested resource is available.
O&M Intervention	The action is due to O&M intervention.
Unspecified Failure	Sent when none of the specified cause values applies.

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

IMPORTS
    maxNrOfErrors,
    maxNrOfPDPDirections,
    maxNrOfPoints,
    maxNrOfRABs,
    maxNrOfSeparateTrafficDirections,
    maxRAB-Subflows,
    maxRAB-SubflowCombination,
    maxNrOfLevels,
    maxNrOfAltValues,

    id-MessageStructure,
    id-TypeOfError

FROM RANAP-Constants

    Criticality,
    ProcedureCode,
    ProtocolIE-ID,
    TriggeringMessage
FROM RANAP-CommonDataTypes

    ProtocolExtensionContainer{},
    RANAP-PROTOCOL-EXTENSION
FROM RANAP-Containers;

-- A

AllocationOrRetentionPriority ::= SEQUENCE {
    priorityLevel           PriorityLevel,
    pre-emptionCapability       Pre-emptionCapability,
    pre-emptionVulnerability    Pre-emptionVulnerability,
```

```
    queuingAllowed          QueuingAllowed,
    iE-Extensions           ProtocolExtensionContainer { {AllocationOrRetentionPriority-ExtIEs} } OPTIONAL,
    ...
}

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

Alt-RAB-Parameters ::= SEQUENCE {
    altMaxBitrateInf            Alt-RAB-Parameter-MaxBitrateInf                         OPTIONAL,
    altGuaranteedBitRateInf     Alt-RAB-Parameter-GuaranteedBitrateInf                  OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {Alt-RAB-Parameters-ExtIEs} }  OPTIONAL,
    ...
}

Alt-RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}

Alt-RAB-Parameter-GuaranteedBitrateInf ::= SEQUENCE {
    altGuaranteedBitrateType            Alt-RAB-Parameter-GuaranteedBitrateType,
    altGuaranteedBitrates               Alt-RAB-Parameter-GuaranteedBitrates           OPTIONAL
    -- This IE shall be present if  the Type of Guaranteed Bit Rates Information IE is set to "Value range" or "Discrete values" --,
    ...
}

Alt-RAB-Parameter-GuaranteedBitrateType ::= ENUMERATED{
    unspecified,
    value-range,
    discrete-values,
    ...
}

Alt-RAB-Parameter-GuaranteedBitrates ::= SEQUENCE (SIZE (1..maxNrOfAltValues)) OF
    Alt-RAB-Parameter-GuaranteedBitrateList


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


Alt-RAB-Parameter-MaxBitrateInf ::= SEQUENCE {
    altMaxBitrateType           Alt-RAB-Parameter-MaxBitrateType,
    altMaxBitrates              Alt-RAB-Parameter-MaxBitrates           OPTIONAL
    -- This IE shall be present if  the Type of Alternative Maximun Bit Rates Information IE is set to "Value range" or "Discrete values" --,
    ...
}

Alt-RAB-Parameter-MaxBitrateType ::= ENUMERATED{
```

```
    unspecified,
    value-range,
    discrete-values,
    ...
}

Alt-RAB-Parameter-MaxBitrates ::= SEQUENCE (SIZE (1..maxNrOfAltValues)) OF
    Alt-RAB-Parameter-MaxBitrateList


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


AreaIdentity ::= CHOICE {
    sAI             SAI,
    geographicalArea        GeographicalArea,
    ...
}

Ass-RAB-Parameters ::= SEQUENCE {
    assMaxBitrateInf            Ass-RAB-Parameter-MaxBitrateList                        OPTIONAL,
    assGuaranteedBitRateInf     Ass-RAB-Parameter-GuaranteedBitrateList                 OPTIONAL,
    iE-Extensions           ProtocolExtensionContainer { {Ass-RAB-Parameters-ExtIEs} }  OPTIONAL,
    ...
}

Ass-RAB-Parameters-ExtIEs RANAP-PROTOCOL-EXTENSION ::= {
    ...
}


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


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


-- B

BindingID               ::= OCTET STRING (SIZE (4))

BroadcastAssistanceDataDecipheringKeys  ::= SEQUENCE {
    cipheringKeyFlag        BIT STRING (SIZE (1)),
    currentDecipheringKey   BIT STRING (SIZE (56)),
    nextDecipheringKey      BIT STRING (SIZE (56)),
    ...
}

-- C
```

```
Cause ::= CHOICE {
    radioNetwork            CauseRadioNetwork,
    transmissionNetwork     CauseTransmissionNetwork,
    nAS             CauseNAS,
    protocol            CauseProtocol,
    misc                CauseMisc,
    non-Standard            CauseNon-Standard,
    ...
}

CauseMisc ::= INTEGER {
    om-intervention (113),
    no-resource-available (114),
    unspecified-failure (115),
    network-optimisation (116)
} (113..128)

CauseNAS ::= INTEGER {
    user-restriction-start-indication (81),
    user-restriction-end-indication (82),
    normal-release (83)
} (81..96)

CauseProtocol ::= INTEGER {
    transfer-syntax-error (97),
    semantic-error (98),
    message-not-compatible-with-receiver-state (99),
    abstract-syntax-error-reject (100),
    abstract-syntax-error-ignore-and-notify (101),
    abstract-syntax-error-falsely-constructed-message (102)

} (97..112)

CauseRadioNetwork ::= INTEGER {
    rab-pre-empted (1),
    trelocoverall-expiry (2),
    trelocprep-expiry (3),
    treloccomplete-expiry (4),
    tqueing-expiry (5),
    relocation-triggered (6),
    trellocalloc-expiry(7),
    unable-to-establish-during-relocation (8),
    unknown-target-rnc (9),
    relocation-cancelled (10),
    successful-relocation (11),
    requested-ciphering-and-or-integrity-protection-algorithms-not-supported (12),
    change-of-ciphering-and-or-integrity-protection-is-not-supported (13),
```

```
    failure-in-the-radio-interface-procedure (14),
    release-due-to-utran-generated-reason (15),
    user-inactivity (16),
    time-critical-relocation (17),
    requested-traffic-class-not-available (18),
    invalid-rab-parameters-value (19),
    requested-maximum-bit-rate-not-available (20),
    requested-guaranteed-bit-rate-not-available (21),
    requested-transfer-delay-not-achievable (22),
    invalid-rab-parameters-combination (23),
    condition-violation-for-sdu-parameters (24),
    condition-violation-for-traffic-handling-priority (25),
    condition-violation-for-guaranteed-bit-rate (26),
    user-plane-versions-not-supported (27),
    iu-up-failure (28),
    relocation-failure-in-target-CN-RNC-or-target-system(29),
    invalid-RAB-ID (30),
    no-remaining-rab (31),
    interaction-with-other-procedure (32),
    requested-maximum-bit-rate-for-dl-not-available (33),
    requested-maximum-bit-rate-for-ul-not-available (34),
    requested-guaranteed-bit-rate-for-dl-not-available (35),
    requested-guaranteed-bit-rate-for-ul-not-available (36),
    repeated-integrity-checking-failure (37),
    requested-report-type-not-supported (38),
    request-superseded (39),
    release-due-to-UE-generated-signalling-connection-release (40),
    resource-optimisation-relocation (41),
    requested-information-not-available (42),
    relocation-desirable-for-radio-reasons (43),
    relocation-not-supported-in-target-RNC-or-target-system (44),
    directed-retry (45),
    radio-connection-with-UE-Lost (46),
    rNC-unable-to-establish-all-RFCs  (47),
    deciphering-keys-not-available(48),
    dedicated-assistance-data-not-available(49),
    relocation-target-not-allowed (50)
} (1..64)

CauseNon-Standard ::= INTEGER (129..256)

CauseTransmissionNetwork ::= INTEGER {
    signalling-transport-resource-failure (65),
    iu-transport-connection-failed-to-establish (66)
} (65..80)
```

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Makuhari, Japan, 26th – 30th November, 2001

Tdoc R3-013522
Revision of Tdoc R3-013107

CR-Form-v4

CHANGE REQUEST

⌘ **25.413** **CR** **367** ⌘ 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 **X** Core Network **X**

Title:	⌘	Correction to Release 4 additions in Iu to support new positioning methods
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	27 November 2001
Category:	⌘	**F**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	At RAN3#23, the CR302 Release 4 additions in Iu to support new positioning methods was approved and then added new IEs in the Request Type IE (included in Location Reporting Control and Location Report messages) amongst other additions. The Response time IE was added with the condition 'C – ifDirect' that is described as follows: "This IE shall be present if the Event IE is set to 'Direct'." However the Response time IE is relevant only in Direct request for geographical coordinates. Indeed after the RNC has received Location Reporting Control requesting SAI, the RNC already knows current SAI without any time consuming UTRAN internal signalling procedures or measurements. RNC knows the cell(s) belonging to user's active set. The associated SAI for each cell is configured in the RNCs radio network configuration by means of O&M. Thus, RNC just needs to retrieve an appropriate SAI from its own configuration tables and send it to the CN in Location Report. This is why response time is not a significant parameter for SAI request as there is no delay issue.
Summary of change:	⌘	The condition for *Response time* IE is changed as follows, name: IfDirect&GeoCoordReportArea, description: This IE shall be present if the *Event* IE is set to 'Direct' and the *Report Area* IE is set to 'Geographical Coordinates'. Impact Analysis (the sole modification in rev1): Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification because the condition of the *Response Time* IE now intends that RNC and CN do not have to send/expect this IE in LOCATION REPORTING CONTROL and LOCATION REPORT messages in case of Direct request for SAI. The CR has an impact under functional point of view. The impact can be considered isolated because the change affects the Location reporting function.
Consequences if not approved:	⌘	That IE will be included in several cases when it is not needed and relevant at all. Therefore this will just keep inconsistency and meaningless complexity in Rel4

	implementations.

Clauses affected:	⌘	9.2.1.16 and 9.3.4		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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 co-ordinates.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Request Type				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ...)	
>Report Area	M		ENUMERATED(Service Area, Geographical Coordinates, ...)	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&GeoCoordReportArea ~~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&GeoCoordReportArea	This IE shall be present if the *Event* IE is set to 'Direct' and the *Report Area* IE is set to 'Geographical Coordinates'.
IfDirect	This IE shall be present if the *Event* IE is set to 'Direct'.
IfDirect&ChangeArea	This IE shall be present if the *Event* IE is set to 'Direct' or "Change of Service Area".

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

```
RequestType ::= SEQUENCE {
    event               Event,
    reportArea          ReportArea,
    horizontalAccuracyCode      INTEGER (0..127)    OPTIONAL,
    ... ,
    verticalAccuracyCode            INTEGER (0..127)    OPTIONAL,
    -- To be used if Geographical Coordinates shall be reported with a requested accuracy. --
    responseTime                    ResponseTime    OPTIONAL,
    -- This IE shall be present if the Event IE is set to 'Direct' and the Report Area IE is set to
'Geographical Coordinates'. --
    positioningPriority             PositioningPriority OPTIONAL,
    -- This IE shall be present if the Event IE is set to 'Direct' or "Change of Service Area". --
    clientType                      ClientType  OPTIONAL
    -- This IE shall be present if the Event IE is set to 'Direct'. --
}

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 ::= {
    ...
}

ResponseTime    ::= ENUMERATED {
    lowdelay,
    delaytolerant,
...
}

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

RRC-Container               ::= OCTET STRING

-- S
```

Lots of unaffected ASN1 in 9.3.4 not shown

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CR-Form-v3

CHANGE REQUEST

⌘ **25.413** **CR** **372** ⌘ 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 **X** Core Network **X**

Title:	⌘	Chapter A.2.1 (EXAMPLE MESSAGE Layout) missing in version 4.2.0
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	2001-11-19
Category:	⌘	**F**
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:	⌘	Chapter A.2.1 and the heading of Chapter A.2 is missing completly in version 4.2.0
Summary of change:	⌘	The heading of chapter A.2 and chapter A.2.1 have been copied from version 3.7.0 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 relase) because the changes are against a chapter within an informative annex.
Consequences if not approved:	⌘	Annex A will remain unreadable.

Clauses affected:	⌘	A.2, A.2.1
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
	⌘	
Other comments:	⌘	

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://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.

Annex A (informative): RANAP guidelines

A.1 Rules for building RANAP messages

A.1.1 Rules for RANAP messages that shall contain the CN Domain Indicator IE

Based on the principles described in [3], following rules can be deduced:

1) Any RANAP message initiating a connection oriented signalling connection shall contain the *CN Domain Indicator* IE. For the time being, two such RANAP messages are known: INITIAL UE MESSAGE message and RELOCATION REQUEST message.

2) Any RANAP message belonging to class 1 procedures that uses connectionless signalling shall contain the *CN Domain Indicator* IE.

3) Following RANAP message belonging to class 2 procedures that uses connectionless signalling shall contain the *CN Domain Indicator* IE: PAGING message and ERROR INDICATION message, the OVERLOAD message in DL direction (see chapter 8.25.3.1) may contain the *CN Domain Indicator* IE.

A.2 Guidelines for Usage of the Criticality Diagnostics IE

A.2.1 EXAMPLE MESSAGE Layout

Assume the following message format:

IE/Group Name	Presence	Range	IE type and reference	Semantics description	Criticality	Assigned Criticality
Message Type	M				YES	reject
A	M				YES	reject
B	M				YES	reject
>E		*1..<maxE>*			EACH	ignore
>>F		*1..<maxF>*			-	
>>>G		*0..3, …*			EACH	ignore
>>H		*1..<maxH>*			EACH	ignore
>>>G		*0..3, …*			EACH	ignore and notify
>>G	M				YES	reject
>>J		*1..<maxJ>*			-	
>>>G		*0..3, …*			EACH	reject
C	M				YES	reject
>K		*1..<maxK>*			EACH	ignore and notify
>>L		*1..<maxL>*			-	
>>>M	O				-	
D	M				YES	reject

Note 1. The IEs F, J, and L do not have assigned criticality. The IEs F, J, and L are consequently realised as the ASN.1 type SEQUENCE OF of "ordinary" ASN.1 type, e.g. INTEGER. On the other hand, the repeatable IEs with assigned criticality are realised as the ASN.1 type SEQUENCE OF of an IE object, e.g. ProtocolIE-Container.

For the corresponding ASN.1 layout, see subclause A.2.4.

A.2.2 Example on a Received EXAMPLE MESSAGE

Assume further more that a received message based on the above tabular format is according to the figure below.

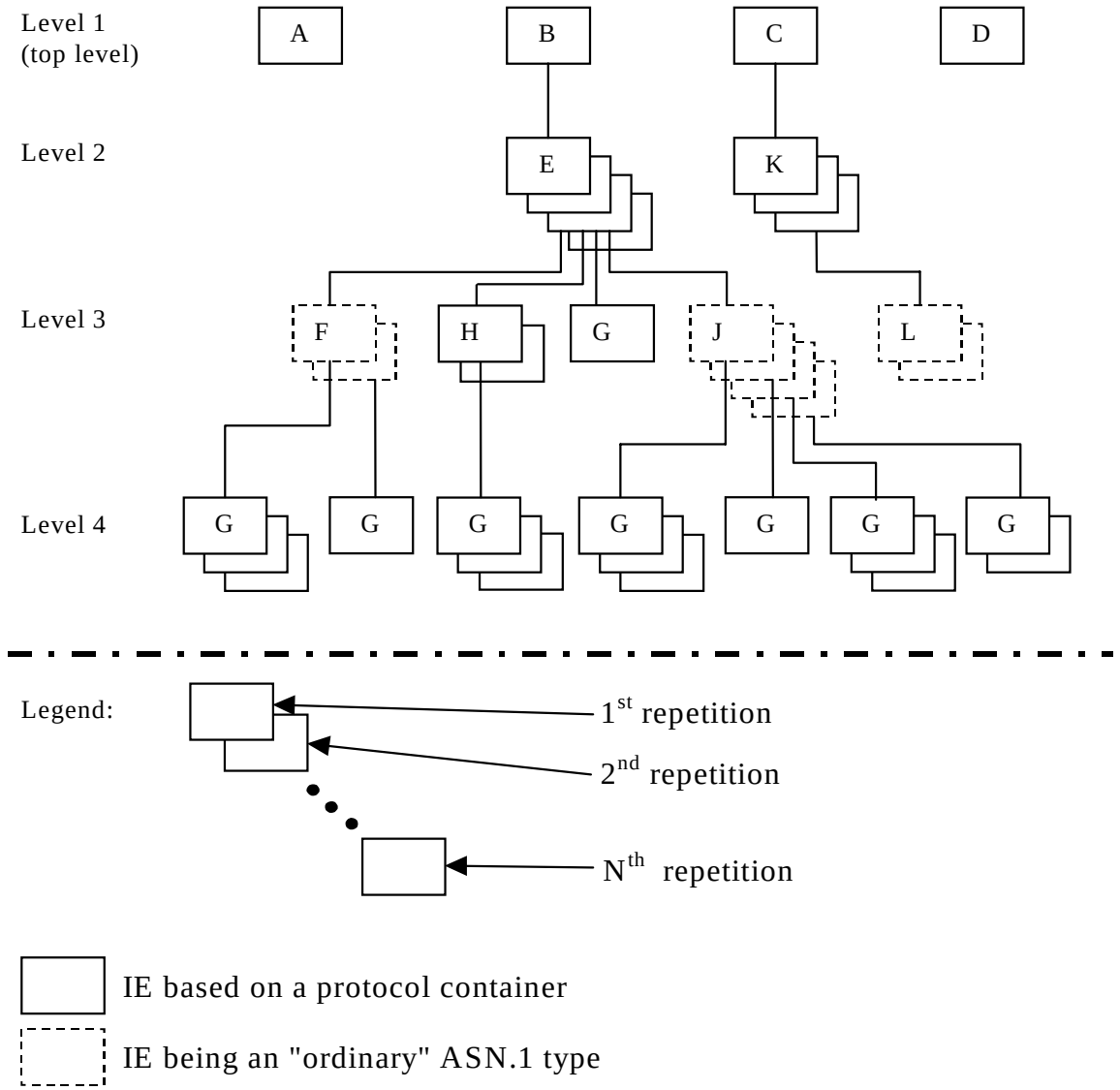

Figure A.1: Example of content of a received RANAP message based on the EXAMPLE MESSAGE

3GPP TSG-RAN WG3 Meeting #25 ***R3-013401***
Makuhari, Japan, 26th – 30th November 2001

CR-Form-v3

CHANGE REQUEST

⌘ **25.413** **CR** **373** ⌘ 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 [X] Core Network [X]

Title:	⌘	N-to-M relation between CN and UTRAN impacts on CN initiated Reset Resource procedure
Source:	⌘	R-WG3
Work item code:	⌘	TrFO
Date:	⌘	2001-11-21
Category:	⌘	**F**
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:	⌘	The changes for the procedural description of the Reset Resource procedure as proposed within CR244 for both, the UTRAN and CN initiated case have been accidently not implemented within v420 for the CN initiated case. This CR re-implements the relevant changes for this procedure. revision 1: It has been discovered that an additional failure occured while implementing CR244 for the UTRAN initiated case, i.e. text for the CN initiated case was copied in chapter 8.29.2.1, which is now removed.
Summary of change:	⌘	Re-implementation of changes necessary for the N-to-M relation between CN and UTRAN for the CN initiated Reset Resource procedure and removal of displaced text in the UTRAN initiated Reset Resource procedure. Impact Analysis: Impact assessment towards the previous version of the sepcification (same release): This CR has isolated impact with the previous version of the specification because an CN initiated Reset Resource procedure would not work properly if the N-to-M relation between CN and UTRAN is implemented. The CR has an impact under protocol and functional point of view. The impact can be considered isolated because the change affects one system function.
Consequences if not approved:	⌘	The N-to-M relation between CN and UTRAN will remain specified incompletely.

Clauses affected:	⌘	8.29.2.1, 8.29.2.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://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.

8.29.2.1 Reset Resource procedure initiated from the RNC

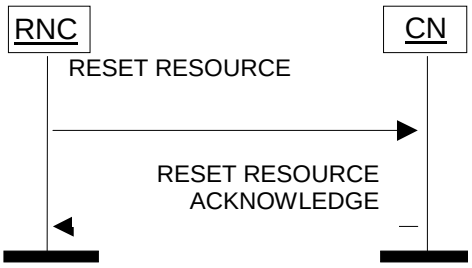

Figure 1: RNC initiated Reset Resource procedure. Successful operation.

The RNC initiates this procedure by sending a RESET RESOURCE message to the CN.

The RESET RESOURCE message shall include the *CN Domain Indicator* IE, the *Global RNC-ID* IE, the *Cause* IE with appropriate cause value (e.g. "Signalling Transport Resource Failure") and a list containing *Iu Signalling Connection Identifier* IEs.

~~When a RESET RESOURCE message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node, the *Global CN-ID* IE shall be included.~~

On reception of this message the RNC shall release locally the resources and references (i.e. radio resources and Iu signalling connectionidentifiers) associated to the specific CN node and Iu signalling connection identifiers indicated in the received message. If no *Global CN-ID* IE is included in the RESET RESOURCE message to indicate the sending CN node, the default CN node for the indicated CN domain shall be considered as sender. The RNC shall always return the RESET RESOURCE ACKNOWLEDGE message to the CN when all Iu-related resources and references have been released. The list of Iu signalling connection identifiers within the RESET RESOURCE ACKNOWLEDGE message shall be in the same order as received in the RESET RESOURCE message. Unknown signalling connection identifiers shall be reported as released.

When a RESET RESOURCE ACKNOWLEDGE message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node, the *Global CN-ID* IE shall be included.

Both CN and RNC shall provide means to prevent the immediate re-assignment of released Iu signalling connection identifiers to minimise the risk that the Reset Resource procedure releases the same Iu signalling connection identifiers re-assigned to new Iu connections.

8.29.2.2 Reset Resource procedure initiated from the CN

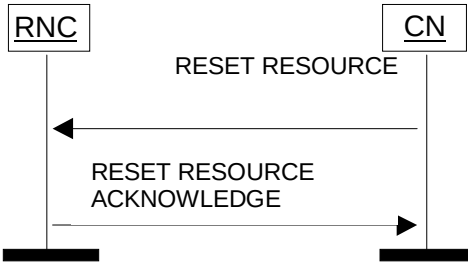

Figure 2: CN initiated Reset Resource procedure. Successful operation.

The CN initiates this procedure by sending a RESET RESOURCE message to the RNC.

The RESET RESOURCE message shall include the *CN Domain Indicator* IE, the *Cause* IE with appropriate cause value (e.g. "Signalling Transport Resource Failure") and a list containing *Iu Signalling Connection Identifier* IEs.

When a RESET RESOURCE message is sent from a CN node towards an RNC for which the sending CN node is not the default CN node, the *Global CN-ID* IE shall be included.

On reception of this message the RNC shall release locally the resources and references (i.e. radio resources and Iu signalling connection identifiers) associated to the specific CN node and Iu signalling connection identifiers indicated in

the received message. If no *Global CN-ID* IE is included in the RESET RESOURCE message to indicate the sending CN node, the default CN node for the indicated CN domain shall be considered as sender. The RNC shall always return the RESET RESOURCE ACKNOWLEDGE message to the CN when all Iu-related resources and references have been released and shall include the *CN Domain Indicator* IE, a list of *Iu Signalling Connection Identifier* IEs and the *Global RNC-ID* IE. The list of *Iu Signalling Connection Identifier* IEs within the RESET RESOURCE ACKNOWLEDGE message shall be in the same order as received in the RESET RESOURCE message. Unknown signalling connection identifiers shall be reported as released.

Both RNC and CN shall provide means to prevent the immediate re-assignment of released Iu signalling connection identifiers to minimise the risk that the Reset Resource procedure releases the same Iu signalling connection identifiers re-assigned to new Iu connections.

3GPP TSG-RAN WG3 Meeting #25 ***R3-013123***
Makuhari, Japan, 26th – 30th November, 2001

CR-Form-v3

CHANGE REQUEST

⌘ **25.413** **CR** **374** ⌘ 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 **X** Core Network **X**

Title:	⌘	Stop of direct location report.
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	2001-11-14
Category:	⌘	**B**
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:	⌘	According to request from SA2 (R3-012774), also a direct location report shall be possible to stop from CN.
Summary of change:	⌘	Value “Stop Direct” is added to Event Type IE.
Consequences if not approved:	⌘	It will not be possible to stop a direct location report. Impact analysis Impact assessment towards the previous version of the specification (same release): This CR has no impact because it is completely backwards compatible.

Clauses affected:	⌘	8.19, 9.2.1.16, 9.3.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
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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 stop a direct report;
- 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, 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.

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 co-ordinates.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Request Type				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ..., Stop Direct)	
>Report Area	M		ENUMERATED(Service Area, Geographical Coordinates, ...)	When the Event IE is set to "Stop Change of service area" or to "Stop Direct", the value of the Report area IE shall be the same as in the LOCATION REPORTING CONTROL message that initiated the location reporting.
>Horizontal Accuracy Code	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 *Event* IE is set to 'Direct'.
IfDirect&ChangeArea	This IE shall be present if the *Event* IE is set to 'Direct' or "Change of Service Area".

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 ASN.1 DESCRIPTION FROM SECTION 9.3.4 NOT SHOWN ******

```
-- E

EncryptionAlgorithm             ::= INTEGER { no-encryption (0), standard-UMTS-encryption-algorith-UEA1 (1) } (0..15)

EncryptionInformation ::= SEQUENCE {
    permittedAlgorithms     PermittedEncryptionAlgorithms,
    key             EncryptionKey,
    iE-Extensions           ProtocolExtensionContainer { {EncryptionInformation-ExtIEs} } OPTIONAL
}

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

EncryptionKey               ::= BIT STRING (SIZE (128))
-- Reference: 33.102

Event ::= ENUMERATED {
    stop-change-of-service-area,
    direct,
    change-of-servicearea,
    ...,
    stop-direct
}
```

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

Tdoc R3-013563
MCC Implementation CR

CR-Form-v4

CHANGE REQUEST

⌘ **25.413** **CR** **384** ⌘ 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 **X** Core Network **X**

Title:	⌘	MCC implementation CR for corrections to Release 4 additions in Iu to support new positioning methods.
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	27 November 2001
Category:	⌘	-
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	
Summary of change:	⌘	Combined CR of agreed and overlapped Rel4 LCS CRs: R3-013518 CR371rev1 R3-013522 CR367rev1
Consequences if not approved:	⌘	
Clauses affected:	⌘	8.19.2, 8.20.2, 9.2.1.16 and 9.3.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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 ~~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 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.

9.2.1.16 Request Type

This element indicates the type of UE location to be reported from RNC and it is either a Service Area or geographical ~~co-ordinates~~Area.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Request Type				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ...)	
>Report Area	M		ENUMERATED(Service Area, Geographical Area~~Coordinates~~, ...)	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&GeoAreaReportArea~~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&GeoAreaReportArea	This IE shall be present if the *Event* IE is set to 'Direct' and the *Report Area* IE is set to 'Geographical Area'.
IfDirect	This IE shall be present if the *Event* IE is set to 'Direct'.
IfDirect&ChangeArea	This IE shall be present if the *Event* IE is set to 'Direct' or "Change of Service Area".

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

```
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-~~coordinates~~area,
    ...
}

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


RequestType ::= SEQUENCE {
    event               Event,
    reportArea          ReportArea,
    horizontalAccuracyCode      INTEGER (0..127)    OPTIONAL,
    ... ,
    verticalAccuracyCode            INTEGER (0..127)    OPTIONAL,
    -- To be used if Geographical Coordinates shall be reported with a requested accuracy. --
    responseTime                    ResponseTime    OPTIONAL,
    -- This IE shall be present if the Event IE is set to 'Direct' and the Report Area IE is set to
'Geographical Area'. --
    positioningPriority             PositioningPriority OPTIONAL,
    -- This IE shall be present if the Event IE is set to 'Direct' or "Change of Service Area". --
    clientType                      ClientType  OPTIONAL
    -- This IE shall be present if the Event IE is set to 'Direct'. --
}

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 ::= {
    ...
}

ResponseTime    ::= ENUMERATED {
    lowdelay,
    delaytolerant,
...
}

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

RRC-Container               ::= OCTET STRING

-- S
```

Lots of unaffected ASN1 in 9.3.4 not shown

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

Tdoc R3-013564
Revision of Tdoc R3-013462

CR-Form-v4

CHANGE REQUEST

⌘ **25.413** **CR** **397** ⌘ 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 **X** Core Network **X**

Title:	⌘	Correction to LCS Vertical Accurancy
Source:	⌘	R-WG3
Work item code:	⌘	TEI
Date:	⌘	27 November 2001
Category:	⌘	**F**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	At RAN3#23, the CR302 Release 4 additions in Iu to support new positioning methods was approved and then added new IEs in the Request Type IE (included in Location Reporting Control and Location Report messages) amongst other additions. However there is an inconsistency between 23.032 and 25.413. In 23.032, the formula to calculate the altitude uncertainty is specified as: h=45*(1.025^k-1). In 25.413 the same formula as for horizontal accuracy (h=10*(1.1^k-1)) is used for vertical accuracy. The formula of the vertical accuracy is wrongly defined in RANAP.
Summary of change:	⌘	The formula of the vertical accuracy is changed to h=45*(1.025^k-1) as it is defined in 23.032. Impact Analysis (the sole modification in rev1): Impact assessment towards the previous version of the specification (same release): This CR has isolated impact with the previous version of the specification because the way of calculating the altitude uncertainty (*Vertical Accurancy* IE) has changed. The CR has an impact under functional point of view. The impact can be considered isolated because the change affects the Location reporting function.
Consequences if not approved:	⌘	That IE will not be defined as it should according to LCS stage 2, and then interpreted in different and wrong ways by different vendors.

Clauses affected:	⌘	9.2.1.16		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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 co-ordinates.

IE/Group Name	Presence	Range	IE type and reference	Semantics description
Request Type				
>Event	M		ENUMERATED(Stop Change of service area, Direct, Change of service area, ...)	
>Report Area	M		ENUMERATED(Service Area, Geographical Coordinates, ...)	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 $h=45*(1.025^{k}-1)$. ~~$r = 10x(1.1^{k}-1)$~~
>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 *Event* IE is set to 'Direct'.
IfDirect&ChangeArea	This IE shall be present if the *Event* IE is set to 'Direct' or "Change of Service Area".