3GPP TSG RAN Meeting #27 RP-050169
Tokyo, Japan, 9 - 11 March 2005

Title CR2500 and CR2501 to 25.331 on Integrity protection related information in the SRNS relocation info
Source 3GPP TSG RAN WG2
Agenda Item email approval

WG Tdoc	Spec	CR	F	Cat	Rel	Curr Ver	Title	Work Item
R2-050386	25.331	2500		F	Rel-5	5.11.0	Integrity protection related information in the SRNS relocation info	TEI5
R2-050386	25.331	2501		A	Rel-6	6.4.0	Integrity protection related information in the SRNS relocation info	TEI5

CR-Form-v7.1

CHANGE REQUEST

⌘ **25.331** CR **2500** ⌘ **rev** **-** ⌘ Current version: **5.11.0** ⌘

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

Proposed change affects: UICC apps⌘ ☐ ME ☐ Radio Access Network **X** Core Network ☐

Title: ⌘	Integrity protection related information in the SRNS relocation info	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI5	***Date:*** ⌘ 10/01/2005
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

Use one of the following categories:
  F *(correction)*
  A *(corresponds to a correction in an earlier release)*
  B *(addition of feature),*
  C *(functional modification of feature)*
  D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.
	Use one of the following releases:
	  Ph2 *(GSM Phase 2)*
	  R96 *(Release 1996)*
	  R97 *(Release 1997)*
	  R98 *(Release 1998)*
	  R99 *(Release 1999)*
	  Rel-4 *(Release 4)*
	  Rel-5 *(Release 5)*
	  Rel-6 *(Release 6)*
	  Rel-7 *(Release 7)*

Reason for change: ⌘	A Source RNC may be required to send downlink messages on SRB3 and SRB4 even after having set the SRNS Relocation Info included in the RANAP Source RNC to Target RNC Transparent Container IE. Therefore, If it wants to be able to send downlink messages after the construction of the container without causing integrity desynchronisation, the Source RNC has to "anticipate" when setting the DL COUNT-I of SRB3 and SRB4 (i.e. DL RRC HFN and DL RRC Message Sequence Number) in the container. The Semantic description of the IEs "Downlink RRC HFN" and "Downlink RRC MSN" in the "SRNS Relocation Info" need to be clarify has it could be understood that the source RNC cannot make such an "anticipation".
Summary of change:⌘	A note is added to clarify that the Source RNC is allowed to "anticipate" for the sending of DL messages after the construction of the container.

Consequences if
not approved: ⌘
	Isolated impact analysis:
	The CR has isolated impact to SRNS relocation.
	
	This CR has no impact to the UE.
	If the UTRAN does not support this CR:
	  If the semantic description is misunderstood, the SRNC will not be able to send
	  any DL message during the relocation preparation phase.

<table>
<tr><td></td><td colspan="2">Impact on test specifications:
No impact is foreseen.</td></tr>
</table>

Clauses affected:	⌘	14.12.4.2			

		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments:	⌘	

14.12.4.2   SRNS RELOCATION INFO

This RRC message is sent between network nodes when preparing for an SRNS relocation or a handover/cell reselection from GERAN *Iu mode*.

With the presence or absence of the IE "RB identity for Hard Handover message" the source RNC indicates to the target SRNC whether the source RNC expects to receive the choice "DL DCCH message" in the IE "RRC information, target RNC to source RNC" in case the SRNS relocation is of type "UE involved". Furthermore the target RNC uses this information for the calculation of the MAC-I.

Direction: source RNC/RAT→target RNC

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
Non RRC IEs					
>RB identity for Handover message	OP		RB identity 10.3.4.16	Gives the id of the radio bearer on which the source RNC will transmit the RRC message in the case the relocation is of type "UE involved". In handover from GERAN *Iu mode* this IE is always set to 2.	
>State of RRC	MP		RRC state indicator, 10.3.3.35a		
>State of RRC procedure	MP		Enumerated (await no RRC message, await RB Release Complete, await RB Setup Complete, await RB Reconfiguration Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, send Cell Update Confirm, send URA Update Confirm, , others)		
Ciphering related information					
>Ciphering status for each CN domain	MP	<1 to maxCNDomains>			

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
>>CN domain identity	MP		CN domain identity 10.3.1.1		
>>Ciphering status	MP		Enumerated(Not started, Started)		
>>START	MP		START 10.3.3.38	START value to be used in this CN domain.	
>Latest configured CN domain	MP		CN domain identity 10.3.1.1	Value contained in the variable of the same name. In case this variable is empty, the source RNC can set any CN domain identity. In that case, the Ciphering status and the Integrity protection status should be Not started and the target RNC should not initialise the variable Latest configured CN domain.	
>Calculation time for ciphering related information	CV-*Ciphering*			Time when the ciphering information of the message were calculated, relative to a cell of the target RNC. In handover and cell reselection from GERAN *Iu mode* this field is not present.	
>>Cell Identity	MP		Cell Identity 10.3.2.2	Identity of one of the cells under the target RNC and included in the active set of the current call	
>>SFN	MP		Integer(0..40 95)		
>COUNT-C list	OP	1 to <maxCNdo mains>		COUNT-C values for radio bearers using transparent mode RLC	
>>CN domain identity	MP		CN domain identity 10.3.1.1		
>>COUNT-C	MP		Bit string(32)		
>Ciphering info per radio bearer	OP	1 to <maxRB>		For signalling radio bearers this IE is mandatory.	
>>RB identity	MP		RB identity 10.3.4.16		
>>Downlink HFN	MP		Bit string(20..25)	This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25 bits)	
>>Downlink SN	CV-*SRB1*		Bit String(7)	VT(US) of RLC UM	
>>Uplink HFN	MP		Bit string(20..25)	This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25 bits)	
Integrity protection related information					
>Integrity protection status	MP		Enumerated(Not started, Started)		
>Signalling radio bearer specific integrity protection information	CV-*IP*	4 to <maxSRBs etup>			
>>Uplink RRC HFN	MP		Bit string (28)	For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to the last value used. Else this value corresponds to the value	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
				the source would have initalized the HFN to at the activation time. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source.	
>>Downlink RRC HFN	MP		Bit string (28)	For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to the last value used. Else this value corresponds to the value the source would have initalized the HFN to at the activation time. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source. In particular, for SRB2, this IE should not take into account the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used.	
>>Uplink RRC Message sequence number	MP		Integer (0.. 15)	For each SRB, this IE corresponds to the last value received or in the case activation time was not reached for a configuration the value equals (activation time - 1).	
>>Downlink RRC Message sequence number	MP		Integer (0.. 15)	For each SRB, this IE corresponds to the last value used or in the case activation time was not reached for a configuration the value equals (activation time -1). In particular, for SRB2, this IE should not take into account the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used.	
>Implementation specific parameters	OP		Bit string (1..512)		
RRC IEs					
UE Information elements					
>U-RNTI	MP		U-RNTI 10.3.3.47	G-RNTI is placed in this field when performing handover or cell reselection from GERAN *Iu mode.*	
>C-RNTI	OP		C-RNTI 10.3.3.8		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
>UE radio access Capability	MP		UE radio access capability 10.3.3.42		
>UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a		
>Last known UE position	OP				
>>SFN	MP		Integer (0..4095)	Time when position was estimated	
>>Cell ID	MP		Cell identity; 10.3.2.2	Indicates the cell, the SFN is valid for.	
>>CHOICE *Position estimate*	MP				
>>>Ellipsoid Point			Ellipsoid Point; 10.3.8.4a		
>>>Ellipsoid point with uncertainty circle			Ellipsoid point with uncertainty circle 10.3.8.4d		
>>>Ellipsoid point with uncertainty ellipse			Ellipsoid point with uncertainty ellipse 10.3.8.4e		
>>>Ellipsoid point with altitude			Ellipsoid point with altitude 10.3.8.4b		
>>>Ellipsoid point with altitude and uncertainty ellipsoid			Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c		
>UE Specific Behaviour Information 1 idle	OP		UE Specific Behaviour Information idle 1 10.3.3.51	This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities"	
>UE Specific Behaviour Information 1 interRAT	OP		UE Specific Behaviour Information 1 interRAT 10.3.3.52	This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities"	
Other Information elements					
>UE system specific capability	OP	1 to <maxSystemCapability>			
>>Inter-RAT UE radio access capability	MP		Inter-RAT UE radio access capability 10.3.8.7		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
UTRAN Mobility Information elements					
>URA Identifier	OP		URA identity 10.3.2.6		
CN Information Elements					
>CN common GSM-MAP NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9		
>CN domain related information	OP	1 to <MaxCNdomains>		CN related information to be provided for each CN domain	
>>CN domain identity	MP				
>>CN domain specific GSM-MAP NAS system info	MP		NAS system information (GSM-MAP) 10.3.1.9		
>>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6		
Measurement Related Information elements					
>For each ongoing measurement reporting	OP	1 to <MaxNoOfMeas>			
>>Measurement Identity	MP		Measurement identity 10.3.7.48		
>>Measurement Command	MP		Measurement command 10.3.7.46		
>>Measurement Type	CV-*Setup*		Measurement type 10.3.7.50		
>>Measurement Reporting Mode	OP		Measurement reporting mode 10.3.7.49		
>>Additional Measurements list	OP		Additional measurements list 10.3.7.1		
>>CHOICE *Measurement*	OP				
>>>Intra-frequency					
>>>>Intra-frequency cell info	OP		Intra-frequency cell info list 10.3.7.33		
>>>>Intra-frequency measurement quantity	OP		Intra-frequency measurement quantity 10.3.7.38		
>>>>Intra-frequency reporting quantity	OP		Intra-frequency reporting quantity 10.3.7.41		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Inter-frequency					
>>>>Inter-frequency cell info	OP		Inter-frequency cell info list 10.3.7.13		
>>>>Inter-frequency measurement quantity	OP		Inter-frequency measurement quantity 10.3.7.18		
>>>>Inter-frequency reporting quantity	OP		Inter-frequency reporting quantity 10.3.7.21		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>Inter-frequency set update	OP		Inter-frequency set update 10.3.7.22		
>>>>CHOICE *report criteria*	OP				
>>>>>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39		
>>>>>Inter-frequency measurement reporting criteria			Inter-frequency measurement reporting criteria 10.3.7.19		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Inter-RAT					
>>>>Inter-RAT cell info	OP		Inter-RAT cell info list 10.3.7.23		
>>>>Inter-RAT measurement quantity	OP		Inter-RAT measurement quantity 10.3.7.29		
>>>>Inter-RAT reporting	OP		Inter-RAT		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
quantity			reporting quantity 10.3.7.32		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Inter-RAT measurement reporting criteria			Inter-RAT measurement reporting criteria 10.3.7.30		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Traffic Volume					
>>>>Traffic volume measurement Object	OP		Traffic volume measurement object 10.3.7.70		
>>>>Traffic volume measurement quantity	OP		Traffic volume measurement quantity 10.3.7.71		
>>>>Traffic volume reporting quantity	OP		Traffic volume reporting quantity 10.3.7.74		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Traffic volume measurement reporting criteria			Traffic volume measurement reporting criteria 10.3.7.72		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Quality					
>>>>Quality measurement quantity	OP		Quality measurement quantity 10.3.7.59		
>>>>CHOICE *report criteria*	OP				
>>>>>Quality measurement reporting criteria			Quality measurement reporting criteria 10.3.7.58		
>>>>>Periodical reporting			Periodical reporting criteria		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			10.3.7.53		
>>>>>No reporting			NULL		
>>>UE internal					
>>>>UE internal measurement quantity	OP		UE internal measurement quantity 10.3.7.79		
>>>>UE internal reporting quantity	OP		UE internal reporting quantity 10.3.7.82		
>>>>CHOICE *report criteria*	OP				
>>>>>UE internal measurement reporting criteria			UE internal measurement reporting criteria 10.3.7.80		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>UE positioning					
>>>>LCS reporting quantity	OP		LCS reporting quantity 10.3.7.111		
>>>>CHOICE *report criteria*	OP				
>>>>>LCS reporting criteria			LCS reporting criteria 10.3.7.110		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting					
Radio Bearer Information Elements					
>Predefined configuration status information	OP		Predefined configuration status information 10.3.4.5a		
>Signalling RB information list	MP	1 to <maxSRBsetup>		For each signalling radio bearer	
>>Signalling RB information	MP		Signalling RB information to setup 10.3.4.24		
>RAB information list	OP	1 to <maxRABsetup>		Information for each RAB	
>>RAB information	MP		RAB information to setup 10.3.4.10		
Transport Channel Information Elements					
Uplink transport channels					
>UL Transport channel information common for all transport channels	OP		UL Transport channel information		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			common for all transport channels 10.3.5.24		
>UL transport channel information list	OP	1 to <MaxTrCH>			
>>UL transport channel information	MP		Added or reconfigured UL TrCH information 10.3.5.2		
>CHOICE *mode*	OP				
>>FDD					
>>>CPCH set ID	OP		CPCH set ID 10.3.5.5		
>>>Transport channel information for DRAC list	OP	1 to <MaxTrCH>			
>>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>>TDD				(no data)	
Downlink transport channels					
>DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
>DL transport channel information list	OP	1 to <MaxTrCH>			
>>DL transport channel information	MP		Added or reconfigured DL TrCH information 10.3.5.1		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
PhyCH information elements					
>TPC Combination Info list	OP	1 to <maxRL>			
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>TPC combination index	MP		TPC combination index 10.3.6.85		
>Transmission gap pattern sequence	OP	1 to <maxTGPS>			REL-5
>>TGPSI	MP		TGPSI 10.3.6.82		
>> Current TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive	
>>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the latest past frame of the first pattern within the Transmission Gap Pattern Sequence.	
>>Transmission gap pattern sequence configuration parameters	OP				
>>>TGMP	MP		Enumerated(TDD measurement, FDD measurement, GSM carrier RSSI measurement, GSM Initial BSIC identification, GSM BSIC re-confirmation, Multi-carrier measurement)	Transmission Gap pattern sequence Measurement Purpose.	
>>>TGPRC	MP		Integer (1..511, Infinity)	The number of remaining transmission gap patterns within the Transmission Gap Pattern Sequence.	
>>>TGSN	MP		Integer (0..14)	Transmission Gap Starting Slot Number

The slot number of the first transmission gap slot within the TGCFN. | |
| >>>TGL1 | MP | | Integer(1..14 | The length of the first Transmission Gap within the | |

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			)	transmission gap pattern expressed in number of slots	
>>>TGL2	MD		Integer (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1. The value of TGL2 shall be ignored if TGD is set to "undefined"	
>>>TGD	MP		Integer(15..269, undefined)	Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to undefined.	
>>>TGPL1	MP		Integer (1..144)	The duration of transmission gap pattern 1.	
>>>TGPL2	MD		Integer (1..144)	The duration of transmission gap pattern 2. If omitted, then TGPL2=TGPL1.	
>>>RPP	MP		Enumerated (mode 0, mode 1).	Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied	
>>>ITP	MP		Enumerated (mode 0, mode 1).	Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.	
>>>CHOICE *UL/DL mode*	MP				
>>>>DL only				Compressed mode used in DL only	
>>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap	
>>>>UL only				Compressed mode used in UL only	
>>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer	Method for generating uplink compressed mode gap	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			scheduling)		
>>>>UL and DL				Compressed mode used in UL and DL	
>>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap	
>>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap	
>>>Downlink frame type	MP		Enumerated (A, B)		
>>>DeltaSIR1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase)	
>>>DeltaSIRafter1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.	
>>>DeltaSIR2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.	
>>>DeltaSIRafter2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.	
>>>N Identify abort	CV-*Initial BSIC*		Integer(1..128)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
>>>T Reconfirm abort	CV-*Re-confirm BSIC*		Real(0.5..10.0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.	
>Scrambling Code Change List	CH-*SF/2*	1 to \<maxRL\>			REL-5
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>Scrambling code change	MP		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.	
Other Information elements					
>Measurement report	OP		MEASUREMENT REPORT 10.2.1.9		
>Failure cause	OP		Failure cause 10.3.3.13	Diagnostics information related to an earlier SRNC Relocation request (see NOTE 2 in 14.12.0a)	
>Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.12		

Multi Bound	Explanation
MaxNoOfMeas	Maximum number of active measurements, upper limit 16

Condition	Explanation
Setup	The IE is mandatory present when the IE Measurement command has the value "Setup", otherwise the IE is not needed.
Ciphering	The IE is mandatory present when the IE Ciphering Status has the value "started" and the ciphering counters need not be reinitialised, otherwise the IE is not needed.
IP	The IE is mandatory present when the IE Integrity protection status has the value "started" and the integrity protection counters need not be reinitialised, otherwise the IE is not needed.
ProtErr	This IE is mandatory present if the IE "Protocol error indicator" is included and has the value "TRUE". Otherwise it is not needed.
SRB1	The IE is mandatory present for RB1. Otherwise it is not needed.
Active	This IE is mandatory present when the value of the IE "Current TGPS Status Flag" is "Active" and not needed otherwise.
Initial BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.
SF/2	The IE is mandatory present if the IE "Transmission Gap Pattern Sequence" is included and has the value "SF/2" as the compressed mode method, and already sent the UE the IE "Scrambling Code Change" for each RL in the active set. Otherwise the IE is not needed.

CR-Form-v7.1

CHANGE REQUEST

| ⌘ | **25.331** CR **2501** | ⌘**rev** | **-** | ⌘ | Current version: | **6.4.0** | ⌘ |

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

Proposed change affects: UICC apps⌘ ☐   ME ☐ Radio Access Network **X** Core Network ☐

Title: ⌘	Integrity protection related information in the SRNS relocation info	
Source: ⌘	RAN WG2	
Work item code:⌘	TEI5	***Date:*** ⌘ 10/01/2005
Category: ⌘	**A**	***Release:*** ⌘ Rel-6

Use one of the following categories:	*Use one of the following releases:*
F *(correction)*	*Ph2 (GSM Phase 2)*
A *(corresponds to a correction in an earlier release)*	*R96 (Release 1996)*
B *(addition of feature),*	*R97 (Release 1997)*
C *(functional modification of feature)*	*R98 (Release 1998)*
D *(editorial modification)*	*R99 (Release 1999)*
Detailed explanations of the above categories can	*Rel-4 (Release 4)*
be found in 3GPP TR 21.900.	*Rel-5 (Release 5)*
	Rel-6 (Release 6)
	Rel-7 (Release 7)

Reason for change: ⌘	A Source RNC may be required to send downlink messages on SRB3 and SRB4 even after having set the SRNS Relocation Info included in the RANAP Source RNC to Target RNC Transparent Container IE. Therefore, If it wants to be able to send downlink messages after the construction of the container without causing integrity desynchronisation, the Source RNC has to "anticipate" when setting the DL COUNT-I of SRB3 and SRB4 (i.e. DL RRC HFN and DL RRC Message Sequence Number) in the container.

The Semantic description of the IEs "Downlink RRC HFN" and "Downlink RRC MSN" in the "SRNS Relocation Info" need to be clarify has it could be understood that the source RNC cannot make such an "anticipation". |
| ***Summary of change:***⌘ | A note is added to clarify that the Source RNC is allowed to "anticipate" for the sending of DL messages after the construction of the container. |
| ***Consequences if***
 not approved: ⌘ | **Isolated impact analysis:**
 The CR has isolated impact to SRNS relocation.

 This CR has no impact to the UE.
 If the UTRAN does not support this CR:
 If the semantic description is misunderstood, the SRNC will not be able to send any DL message during the relocation preparation phase. |

CR page 1

Clauses affected:	⌘	14.12.4.2		

		Y	**N**			
Other specs *affected:*	⌘		**X**	Other core specifications	⌘	
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

14.12.4.2 SRNS RELOCATION INFO

This RRC message is sent between network nodes when preparing for an SRNS relocation or a handover/cell reselection from GERAN *Iu mode*.

With the presence or absence of the IE "RB identity for Hard Handover message" the source RNC indicates to the target SRNC whether the source RNC expects to receive the choice "DL DCCH message" in the IE "RRC information, target RNC to source RNC" in case the SRNS relocation is of type "UE involved". Furthermore the target RNC uses this information for the calculation of the MAC-I.

Direction: source RNC/RAT→target RNC

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
Non RRC IEs					
>RB identity for Handover message	OP		RB identity 10.3.4.16	Gives the id of the radio bearer on which the source RNC will transmit the RRC message in the case the relocation is of type "UE involved". In handover from GERAN *Iu mode* this IE is always set to 2.	
>State of RRC	MP		RRC state indicator, 10.3.3.35a		
>State of RRC procedure	MP		Enumerated (await no RRC message, await RB Release Complete, await RB Setup Complete, await RB Reconfiguration Complete, await Transport CH Reconfiguration Complete, await Physical CH Reconfiguration Complete, await Active Set Update Complete, await Handover Complete, send Cell Update Confirm, send URA Update Confirm, , others)		
Ciphering related information					
>Ciphering status for each CN	MP	<1 to			

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
domain		maxCNDomains>			
>>CN domain identity	MP		CN domain identity 10.3.1.1		
>>Ciphering status	MP		Enumerated(Not started, Started)		
>>START	MP		START 10.3.3.38	START value to be used in this CN domain.	
>Latest configured CN domain	MP		CN domain identity 10.3.1.1	Value contained in the variable of the same name. In case this variable is empty, the source RNC can set any CN domain identity. In that case, the Ciphering status and the Integrity protection status should be Not started and the target RNC should not initialise the variable Latest configured CN domain.	
>Calculation time for ciphering related information	CV-*Ciphering*			Time when the ciphering information of the message were calculated, relative to a cell of the target RNC. In handover and cell reselection from GERAN *Iu mode* this field is not present.	
>>Cell Identity	MP		Cell Identity 10.3.2.2	Identity of one of the cells under the target RNC and included in the active set of the current call	
>>SFN	MP		Integer(0..4095)		
>COUNT-C list	OP	1 to <maxCNdomains>		COUNT-C values for radio bearers using transparent mode RLC	
>>CN domain identity	MP		CN domain identity 10.3.1.1		
>>COUNT-C	MP		Bit string(32)		
>Ciphering info per radio bearer	OP	1 to <maxRB>		For signalling radio bearers this IE is mandatory.	
>>RB identity	MP		RB identity 10.3.4.16		
>>Downlink HFN	MP		Bit string(20..25)	This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25 bits)	
>>Downlink SN	CV-*SRB1*		Bit String(7)	VT(US) of RLC UM	
>>Uplink HFN	MP		Bit string(20..25)	This IE is either RLC AM HFN (20 bits) or RLC UM HFN (25 bits)	
Integrity protection related information					
>Integrity protection status	MP		Enumerated(Not started, Started)		
>Signalling radio bearer specific integrity protection information	CV-*IP*	4 to <maxSRBsetup>			
>>Uplink RRC HFN	MP		Bit string (28)	For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
				the last value used. Else this value corresponds to the value the source would have initalized the HFN to at the activation time. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source.	
>>Downlink RRC HFN	MP		Bit string (28)	For each SRB, in the case activation times for the next IP configuration to be applied on this SRB have already been reached this IE corresponds to the last value used. Else this value corresponds to the value the source would have initalized the HFN to at the activation time. Increment of HFN due to RRC SN roll over is taken care of by target based on value sent by the source. In particular, for SRB2, this IE should not take into account the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used.	
>>Uplink RRC Message sequence number	MP		Integer (0.. 15)	For each SRB, this IE corresponds to the last value received or in the case activation time was not reached for a configuration the value equals (activation time - 1).	
>>Downlink RRC Message sequence number	MP		Integer (0.. 15)	For each SRB, this IE corresponds to the last value used or in the case activation time was not reached for a configuration the value equals (activation time -1). In particular, for SRB2, this IE should not take into account the RRC message that will trigger the relocation. NOTE: In order to have the possibility of sending downlink messages after the construction of the IE "SRNS RELOCATION INFO", the source may choose a value ahead of the last value used.	
>Implementation specific parameters	OP		Bit string (1..512)		
RRC IEs					
UE Information elements					
>U-RNTI	MP		U-RNTI 10.3.3.47	G-RNTI is placed in this field when performing handover or cell reselection from GERAN *Iu mode*.	
>C-RNTI	OP		C-RNTI		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			10.3.3.8		
>UE radio access Capability	MP		UE radio access capability 10.3.3.42		
>UE radio access capability extension	OP		UE radio access capability extension 10.3.3.42a		
>Last known UE position	OP				
>>SFN	MP		Integer (0..4095)	Time when position was estimated	
>>Cell ID	MP		Cell identity; 10.3.2.2	Indicates the cell, the SFN is valid for.	
>>CHOICE *Position estimate*	MP				
>>>Ellipsoid Point			Ellipsoid Point; 10.3.8.4a		
>>>Ellipsoid point with uncertainty circle			Ellipsoid point with uncertainty circle 10.3.8.4d		
>>>Ellipsoid point with uncertainty ellipse			Ellipsoid point with uncertainty ellipse 10.3.8.4e		
>>>Ellipsoid point with altitude			Ellipsoid point with altitude 10.3.8.4b		
>>>Ellipsoid point with altitude and uncertainty ellipsoid			Ellipsoid point with altitude and uncertainty ellipsoid 10.3.8.4c		
>UE Specific Behaviour Information 1 idle	OP		UE Specific Behaviour Information idle 1 10.3.3.51	This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities"	
>UE Specific Behaviour Information 1 interRAT	OP		UE Specific Behaviour Information 1 interRAT 10.3.3.52	This IE should be included if received via the "INTER RAT HANDOVER INFO", the "RRC CONNECTION REQUEST", the IE "SRNS RELOCATION INFO" or the "Inter RAT Handover Info with Inter RAT Capabilities"	
Other Information elements					
>UE system specific capability	OP	1 to <maxSystemCapability>			
>>Inter-RAT UE radio access capability	MP		Inter-RAT UE radio access capability 10.3.8.7		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
UTRAN Mobility Information elements					
>URA Identifier	OP		URA identity 10.3.2.6		
CN Information Elements					
>CN common GSM-MAP NAS system information	MP		NAS system information (GSM-MAP) 10.3.1.9		
>CN domain related information	OP	1 to <MaxCNdomains>		CN related information to be provided for each CN domain	
>>CN domain identity	MP				
>>CN domain specific GSM-MAP NAS system info	MP		NAS system information (GSM-MAP) 10.3.1.9		
>>CN domain specific DRX cycle length coefficient	MP		CN domain specific DRX cycle length coefficient, 10.3.3.6		
Measurement Related Information elements					
>For each ongoing measurement reporting	OP	1 to <MaxNoOfMeas>			
>>Measurement Identity	MP		Measurement identity 10.3.7.48		
>>Measurement Command	MP		Measurement command 10.3.7.46		
>>Measurement Type	CV-*Setup*		Measurement type 10.3.7.50		
>>Measurement Reporting Mode	OP		Measurement reporting mode 10.3.7.49		
>>Additional Measurements list	OP		Additional measurements list 10.3.7.1		
>>CHOICE *Measurement*	OP				
>>>Intra-frequency					
>>>>Intra-frequency cell info	OP		Intra-frequency cell info list 10.3.7.33		
>>>>Intra-frequency measurement quantity	OP		Intra-frequency measurement quantity 10.3.7.38		
>>>>Intra-frequency reporting quantity	OP		Intra-frequency reporting quantity 10.3.7.41		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Inter-frequency					
>>>>Inter-frequency cell info	OP		Inter-frequency cell info list 10.3.7.13		
>>>>Inter-frequency measurement quantity	OP		Inter-frequency measurement quantity 10.3.7.18		
>>>>Inter-frequency reporting quantity	OP		Inter-frequency reporting quantity 10.3.7.21		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>Inter-frequency set update	OP		Inter-frequency set update 10.3.7.22		
>>>>CHOICE *report criteria*	OP				
>>>>>Intra-frequency measurement reporting criteria			Intra-frequency measurement reporting criteria 10.3.7.39		
>>>>>Inter-frequency measurement reporting criteria			Inter-frequency measurement reporting criteria 10.3.7.19		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Inter-RAT					
>>>>Inter-RAT cell info	OP		Inter-RAT cell info list 10.3.7.23		
>>>>Inter-RAT measurement quantity	OP		Inter-RAT measurement quantity 10.3.7.29		
>>>>Inter-RAT reporting	OP		Inter-RAT		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
quantity			reporting quantity 10.3.7.32		
>>>>Reporting cell status	OP		Reporting cell status 10.3.7.61		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Inter-RAT measurement reporting criteria			Inter-RAT measurement reporting criteria 10.3.7.30		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Traffic Volume					
>>>>Traffic volume measurement Object	OP		Traffic volume measurement object 10.3.7.70		
>>>>Traffic volume measurement quantity	OP		Traffic volume measurement quantity 10.3.7.71		
>>>>Traffic volume reporting quantity	OP		Traffic volume reporting quantity 10.3.7.74		
>>>>Measurement validity	OP		Measurement validity 10.3.7.51		
>>>>CHOICE *report criteria*	OP				
>>>>>Traffic volume measurement reporting criteria			Traffic volume measurement reporting criteria 10.3.7.72		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>Quality					
>>>>Quality measurement quantity	OP		Quality measurement quantity 10.3.7.59		
>>>>CHOICE *report criteria*	OP				
>>>>>Quality measurement reporting criteria			Quality measurement reporting criteria 10.3.7.58		
>>>>>Periodical reporting			Periodical reporting criteria		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			10.3.7.53		
>>>>>No reporting			NULL		
>>>UE internal					
>>>>UE internal measurement quantity	OP		UE internal measurement quantity 10.3.7.79		
>>>>UE internal reporting quantity	OP		UE internal reporting quantity 10.3.7.82		
>>>>CHOICE *report criteria*	OP				
>>>>>UE internal measurement reporting criteria			UE internal measurement reporting criteria 10.3.7.80		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting			NULL		
>>>UE positioning					
>>>>LCS reporting quantity	OP		LCS reporting quantity 10.3.7.111		
>>>>CHOICE *report criteria*	OP				
>>>>>LCS reporting criteria			LCS reporting criteria 10.3.7.110		
>>>>>Periodical reporting			Periodical reporting criteria 10.3.7.53		
>>>>>No reporting					
Radio Bearer Information Elements					
>Predefined configuration status information	OP		Predefined configuration status information 10.3.4.5a		
>Signalling RB information list	MP	1 to <maxSRBsetup>		For each signalling radio bearer	
>>Signalling RB information	MP		Signalling RB information to setup 10.3.4.24		
>RAB information list	OP	1 to <maxRABsetup>		Information for each RAB	
>>RAB information	MP		RAB information to setup 10.3.4.10		
Transport Channel Information Elements					
Uplink transport channels					
>UL Transport channel information common for all transport channels	OP		UL Transport channel information		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			common for all transport channels 10.3.5.24		
>UL transport channel information list	OP	1 to <MaxTrCH>			
>>UL transport channel information	MP		Added or reconfigured UL TrCH information 10.3.5.2		
>CHOICE *mode*	OP				
>>FDD					
>>>CPCH set ID	OP		CPCH set ID 10.3.5.5		
>>>Transport channel information for DRAC list	OP	1 to <MaxTrCH>			
>>>>DRAC static information	MP		DRAC static information 10.3.5.7		
>>TDD				(no data)	
Downlink transport channels					
>DL Transport channel information common for all transport channels	OP		DL Transport channel information common for all transport channels 10.3.5.6		
>DL transport channel information list	OP	1 to <MaxTrCH>			
>>DL transport channel information	MP		Added or reconfigured DL TrCH information 10.3.5.1		

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
PhyCH information elements					
>TPC Combination Info list	OP	1 to \<maxRL>			
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>TPC combination index	MP		TPC combination index 10.3.6.85		
>Transmission gap pattern sequence	OP	1 to \<maxTGPS>			REL-5
>>TGPSI	MP		TGPSI 10.3.6.82		
>> Current TGPS Status Flag	MP		Enumerated(active, inactive)	This flag indicates the current status of the Transmission Gap Pattern Sequence, whether it is active or inactive	
>>TGCFN	CV-*Active*		Integer (0..255)	Connection Frame Number of the latest past frame of the first pattern within the Transmission Gap Pattern Sequence.	
>>Transmission gap pattern sequence configuration parameters	OP				
>>>TGMP	MP		Enumerated(TDD measurement, FDD measurement, GSM carrier RSSI measurement, GSM Initial BSIC identification, GSM BSIC re-confirmation, Multi-carrier measurement)	Transmission Gap pattern sequence Measurement Purpose.	
>>>TGPRC	MP		Integer (1..511, Infinity)	The number of remaining transmission gap patterns within the Transmission Gap Pattern Sequence.	
>>>TGSN	MP		Integer (0..14)	Transmission Gap Starting Slot Number The slot number of the first transmission gap slot within the TGCFN.	
>>>TGL1	MP		Integer(1..14	The length of the first Transmission Gap within the	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			)	transmission gap pattern expressed in number of slots	
>>>TGL2	MD		Integer (1..14)	The length of the second Transmission Gap within the transmission gap pattern. If omitted, then TGL2=TGL1. The value of TGL2 shall be ignored if TGD is set to "undefined"	
>>>TGD	MP		Integer(15..269, undefined)	Transmission gap distance indicates the number of slots between starting slots of two consecutive transmission gaps within a transmission gap pattern. If there is only one transmission gap in the transmission gap pattern, this parameter shall be set to undefined.	
>>>TGPL1	MP		Integer (1..144)	The duration of transmission gap pattern 1.	
>>>TGPL2	MD		Integer (1..144)	The duration of transmission gap pattern 2. If omitted, then TGPL2=TGPL1.	
>>>RPP	MP		Enumerated (mode 0, mode 1).	Recovery Period Power control mode during the frame after the transmission gap within the compressed frame. Indicates whether normal PC mode or compressed PC mode is applied	
>>>ITP	MP		Enumerated (mode 0, mode 1).	Initial Transmit Power is the uplink power control method to be used to compute the initial transmit power after the compressed mode gap.	
>>>CHOICE *UL/DL mode*	MP				
>>>>DL only				Compressed mode used in DL only	
>>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap	
>>>>UL only				Compressed mode used in UL only	
>>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer	Method for generating uplink compressed mode gap	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
			scheduling)		
>>>>UL and DL				Compressed mode used in UL and DL	
>>>>>Downlink compressed mode method	MP		Enumerated (puncturing, SF/2, higher layer scheduling)	Method for generating downlink compressed mode gap	
>>>>>Uplink compressed mode method	MP		Enumerated (SF/2, higher layer scheduling)	Method for generating uplink compressed mode gap	
>>>Downlink frame type	MP		Enumerated (A, B)		
>>>DeltaSIR1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the first transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase)	
>>>DeltaSIRafter1	MP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the first transmission gap in the transmission gap pattern.	
>>>DeltaSIR2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE during the frame containing the start of the second transmission gap in the transmission gap pattern (without including the effect of the bit-rate increase) When omitted, DeltaSIR2 = DeltaSIR1.	
>>>DeltaSIRafter2	OP		Real(0..3 by step of 0.1)	Delta in DL SIR target value to be set in the UE one frame after the frame containing the start of the second transmission gap in the transmission gap pattern. When omitted, DeltaSIRafter2 = DeltaSIRafter1.	
>>>N Identify abort	CV-*Initial BSIC*		Integer(1..128)	Indicates the maximum number of repeats of patterns that the UE shall use to attempt to decode the unknown BSIC of the GSM cell in the initial BSIC identification procedure	

Information Element/Group Name	Need	Multi	Type and reference	Semantics description	Version
>>>T Reconfirm abort	CV-*Re-confirm BSIC*		Real(0.5..10.0 by step of 0.5)	Indicates the maximum time allowed for the re-confirmation of the BSIC of one GSM cell in the BSIC re-confirmation procedure. The time is given in steps of 0.5 seconds.	
>Scrambling Code Change List	CH-*SF/2*	1 to <maxRL>			REL-5
>>Primary CPICH info	MP		Primary CPICH info 10.3.6.60		
>>Scrambling code change	MP		Enumerated (code change, no code change)	Indicates whether the alternative scrambling code is used for compressed mode method 'SF/2'.	
Other Information elements					
>Measurement report	OP		MEASUREMENT REPORT 10.2.1.9		
>Failure cause	OP		Failure cause 10.3.3.13	Diagnostics information related to an earlier SRNC Relocation request (see NOTE 2 in 14.12.0a)	
>Protocol error information	CV-*ProtErr*		Protocol error information 10.3.8.12		
MBMS joined information	OP			Included if the UE has joined one or more MBMS services	REL-6
>P-TMSI	OP		P-TMSI (GSM-MAP) 10.3.1.13	In case the UE is in PMM- Idle	REL-6

Multi Bound	Explanation
MaxNoOfMeas	Maximum number of active measurements, upper limit 16

Condition	Explanation
Setup	The IE is mandatory present when the IE Measurement command has the value "Setup", otherwise the IE is not needed.
Ciphering	The IE is mandatory present when the IE Ciphering Status has the value "started" and the ciphering counters need not be reinitialised, otherwise the IE is not needed.
IP	The IE is mandatory present when the IE Integrity protection status has the value "started" and the integrity protection counters need not be reinitialised, otherwise the IE is not needed.
ProtErr	This IE is mandatory present if the IE "Protocol error indicator" is included and has the value "TRUE". Otherwise it is not needed.
SRB1	The IE is mandatory present for RB1. Otherwise it is not needed.
Active	This IE is mandatory present when the value of the IE "Current TGPS Status Flag" is "Active" and not needed otherwise.
Initial BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM Initial BSIC identification" and not needed otherwise.
Re-confirm BSIC	This IE is mandatory present when the value of the IE "TGMP" is set to "GSM BSIC re-confirmation" and not needed otherwise.
SF/2	The IE is mandatory present if the IE "Transmission Gap Pattern Sequence" is included and has the value "SF/2" as the compressed mode method, and already sent the UE the IE "Scrambling Code Change" for each RL in the active set. Otherwise the IE is not needed.